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Editor

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"The general objectives of the Academy shall be therefore to foster: (a) a philosophy of management that will make possible an accomplishment of the economic and social objectives of an industrial society with increasing economy and effectiveness: the public's interests must be paramount in any such philosophy, but adequate consideration must be given to the legitimate interests of capital and labor; (b) greater understanding by executive leadership of the requirements for a sound application of the scientific method to the solution of managerial problems, based on such a philosophy; and (c) wider acquaintance and closer co-operation among such persons as are interested in the development of a philosophy and science of management."

It is suggested that, as a general rule, full-length articles contributing to these objectives be approximately 1500 to 3000 words in length. Interested consideration will also be given to shorter, abbreviated notes or ideas relating to specific aspects of management thought, philosophy, theory, techniques of wide applicability, curriculum-building, or teaching. Perhaps one of the more important heuristic functions that this Journal can fulfill is that of exchanging specific new insights into challenging management problems. Informed discussion of controversial topics and competent rejoinders to ideas expressed in this Journal will be particularly welcome.

Many of us have specific, detached ideas on various topics, and notes on such topics could be submitted for the consideration of our readers without investing extensive scholarly effort. An important requirement is that manuscripts be written in a straightforward style of English--esoteric writing will find no place in the Journal of the Academy of Management. The Academy's Research and Publications Committee has decided against the publication of book reviews.

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Suggestions, criticisms, or comments on matters relating to the Journal will at all times find a welcome reception.

The Editor

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THE PRESSURE FOR PRINCIPLES: A CHALLENGE TO MANAGEMENT PROFESSORS

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The thesis of this paper is very simple; its defense is more difficult; and its implementation will be even more difficult.

My thesis is this: There exists a systematic body of knowledge that constitutes a core of principles of management that are true in all managerial situations; these principles are applicable whether it is a business organization, a government organization, a religious organization, a social or any other type of organization; these principles are also true of all levels of management from the foreman to the top executive.

As a first corollary of this thesis is the belief that if a manager knows these principles and knows how to apply them to a given situation, he will perform the managerial functions most efficiently and effectively; also, if the teacher of management knows and understands these principles, he should be able to apply them in teaching the more advanced management courses. This latter statement is true whether the teacher uses the lecture, discussion, case, or any other method of presentation.

Before attempting to defend this thesis, I should perhaps first discuss it briefly and suggest a way of implementing it.

To me, there are differences between laws, principles, and fundamentals. First, a law is defined as "a statement of an order or relation of phenomena which, so far as known, is invariable under the given conditions."[1] A principle is "a general proposition sufficiently applicable to the series of phenomena under consideration to provide a guide to thought."[2] A fundamental is a statement that serves as the basis of action.

As is true in the other social sciences and in the natural sciences, there are few laws of management; and there are relatively few principles of management; but there are many fundamentals of management. It is my contention that the long lists of so-called principles found in most management text books today are not, in reality, principles but are, instead, fundamentals or truisms. If there is to be a true principle of management, there must exist a general proposition that applies sufficiently well to a series of phenomena to provide a guide to thought or action; that is, there must be a statement of probability of cause and effect to guide a person's judgment in the process of decision making, which is the essence of the managerial functions.

Now, I shall try to defend my thesis. Several years ago, Dr. Ronald Shuman in an address before a group at Louisiana State University made the

statement that "management is a universal." In his presentation, he emphasized the fact that experience had shown, particularly during World War II, when there was such mass conversion from civilian to war production, and, conversely, following the War, that an effective manager could transfer from one type of industry to another without an appreciable loss of efficiency. This statement implied to me that there must be a unique body of knowledge that formed a set of principles that these managers followed, regardless of the industry in which they were operating. This possibility was so intriguing to me that it led me into an investigation that has progressed intermittently since that time.

The history of management literature is an implication of, and a groping for, this body of knowledge or set of principles. As early as 1644 B.C. the Chinese applied the principle of division of labor.[3] In 1832 Charles Babbage wrote about the principle of specialization, which is another statement of division of labor.[4] All of us realize that Taylor believed there was such a thing as a science of management, and he and his followers attempted to explain and further develop these and other principles which comprise this science. Taylor himself recognized, though, that the development of a set of principles was an evolutionary process. This was evident when he said, "Scientific management at every step has been an evolution, not a theory. In all cases the practice has preceded the theory, not succeeded it. There is nothing in scientific management that is fixed."[5]

As further evidence of this evolutionary development of management it must be recognized that the great progress in manufacturing in this country is most satisfactorily explained on the grounds that managers of industrial concerns unconsciously applied a body of fundamentals which have brought improvements and increased success. One fact that stands out above all else in the writings, autobiographies, and biographies of outstanding managers is that they applied principles in performing the managerial function.

L. P. Alford attempted to reduce the "laws" of management as they apply to manufacturing into a codified body of knowledge. He said that amid the complexities of present-day manufacturing, the maze of systems, and the innumerable variations of methods, "...what executive has not wished for some formulation of the underlying fundamentals which have been developed through the long process of thought and experience?...In the very nature of things, such basic principles must exist."[6] Although not agreeing with him that there were some fifty fundamental laws, I must agree with him that there is this body of principles that servesas the foundation for the practice of the management profession.

Adding his voice to the others was Henri Fayol, who said,

> "The managerial function finds its only outlet through the members of the organization (the body corporate). ... The soundness and good

working order of the body corporate depends on a certain number of conditions termed indiscriminately principles, laws, rules. For preference I shall adopt the term principles whilst dissociating it from any suggestion of rigidity, for there is nothing rigid or absolute in management affairs; it is all a question of proportion."[7]

At the present time there is much controversy raging over the content and methods of teaching management courses. There seem to be three different and distinct groups sharing different opinions. These groups are those that believe that management can be taught as a set of principles that will pervade thinking and application in other areas; those who think of management in terms of policy; and those who believe management should be included in all business courses.[8] Included in the first group and bearing out my thesis is William H. Newman, who says that there exists such a body of knowledge, which he terms basic principles:

"A considerable body of knowledge exists about successful techniques for administering an enterprise. This knowledge, however, is in scattered places, often consisting of intangible know-how that is passed from one executive to his subordinates without any clear-cut formulation. Moreover, basic principles of administration are frequently so incumbered with a specific application that their key features are not apparent."[9]

In 1955, before a meeting of the American Association of Collegiate Schools of Business, Dr. Robert D. Calkins implied that there was such a body of knowledge when he said,

"Administration is fundamentally the direction of affairs. It is purposive action and to an increasing degree it is informed, rational, and deliberate action. It draws upon the knowledge of the physical sciences and the practical arts; it employs the knowledge and techniques of the social sciences; but it is overwhelmingly concerned with the choice of ends, ways, and means for the attainment of desired results. It is curbed by moral codes and ethical principles; and it is driven by springs of ambition and devotion that largely escape analysis."[10]

Finally, the same conclusion was reached by Charles E. Summer, Jr., in the study sponsored by the Academy of Management concerning the factors in effective administration. His conclusions are:

"The term 'field of administration' is used here in a special sense. Traditionally, a field implies a systematic body of knowledge. It is an important thesis of this report that the field of administration includes not only a cluster of knowledge factors, but an equally or more important cluster of attitudes and abilities. ...

. . . . . .

"There is some weight of opinion to the effect that administration is also applicable to all organizations in which people work

together toward a purpose--business, government, and non-profit organizations of all types.

> "And, ... there is almost complete agreement that at least parts of administration are applicable to all levels within the organization, from foreman and supervisor to president, from police captain to police commissioner."[11]

It should be emphasized at this point that I am not saying that management is a science. I cannot agree with Taylor that it is a mechanical application of certain principles. Instead, I agree with Sheldon when he says that the exercise of human faculties in combination makes essential the exercise of the human faculty of management, and being the exercise of a special human faculty,

> "... management is an art. The present emphasis is laid upon the science of management. Undoubtedly, there is a science of management, but it is to be sharply distinguished from the art which employs that science. A profound knowledge of the ascertained and codified facts of management does not necessarily entail a capacity for management. Scientific knowledge is an essential preliminary to the practice of an art, but it is not the art itself. The science of management has not as yet been reduced to an acceptable form."[12]

It is my contention that it is not a question of management being either an art or a science, but that management is a combination of both and that this combination is not a fixed proportion but is found in varying proportions. I cannot agree with Dean Stanley F. Teele of the Harvard Business School, who says that business management is mixture of art and science; and although there is plenty of disagreement about the relative proportions,

> "... the present ratio is about 90% art and 10% science. Though a very great variety of developments are presently increasing that proportion which can properly be called science, I am willing to venture a guess that by the end of another generation, the ratio will still be 80% art and perhaps 20% science."[13]

The development of a codified body of knowledge such as I am advocating will tend to increase the proportion of the management function that is scientific and will tend to lower the proportion that is artistic; however, it can never eliminate the latter. This opinion is shared by Clarence Randall, former Chairman of the Board of Inland Steel Corporation, who said, A "lesson of my own business experience is that ...the art of management, even in an industry that rests for its success on the achievements of the scientist and engineer, requires a broadly cultivated mind."[14]

Just as the medical doctor uses an art in practicing medicine, but bases his skill upon the sciences of biology, chemistry, zoology, and other disciplines; just as the art of painting is based on the science of the mixing of colors; just as the composition of music is based, among other things,

upon the science of mathematics (as witnessed by the fact that an electronic computer recently composed a piece of music using mathematical logic), just so is the art of management based upon the other social and natural sciences and the body of principles that go to make up scientific management.

Also, many of the principles of the other fields of knowledge are used by management. For example, two laws of physics apply equally well in managing people. These are Newton's Third Law of Motion, which says that "for every action there is an equal but opposite reaction," and the Law of Inertia, which says, "A body at rest tends to remain at rest; a body in motion tends to remain in motion." Both these principles hold equally true in dealing with employees. Also, many principles of economics are used by management, for example, the Law of Diminishing Returns, the Principle of Marginal Utility, and so on.

The science, or scientific part of management, is that body of principles that I am suggesting exists: the art of management is the application of these principles in dealing with the factors of production of land, labor, and capital; or, from the managerial point of view, men, materials, money, machines, and methods--for every one who knows <u>how</u> does not know how <u>to do</u>.

Now, for the implementation of this idea. This is left up to us--the professors of management. It cannot be done by the National Association of Manufacturers, the American Management Association, the American Institute of Management, or any other group of professional managers; it must come from some esoteric group such as a group of management academicians. It may come from an organization such as the Academy of Management. More likely, this codification of a body of knowledge will come from a professor or scholar who will devote his lifetime to such an undertaking. For, although the practical businessman may notice these phenomena, he is too involved with the daily press of decision making to evolve the necessary principles. A mid-Victorian educator expressed this thought in these words:

> "He who learns from one occupied in learning, drinks of a running stream. He who learns from one who has learned all he has to teach, drinks 'the green mantle of the stagnant pool.'"[15]

In summary, I believe there is some inherent quality found in good managers that permits them to move from one managerial situation to another and still operate effectively. This quality must be an abstract one and is connected with an individual combination of senses of values that allows an insight into the nature of men, machines, and materials. It must be abstract; otherwise, it could not be transferred from one situation to another, or from one organization to another, without losing its effectiveness.

Also, it must carry a conscious or unconscious effort to maintain a form of order or equilibrium of the factors of production.

FOOTNOTES

1. Webster's Collegiate Dictionary, 1943.

2. L. P. Alford and H. R. Beatty, Principles of Industrial Management, (New York, The Ronald Press Company, 1951), p. 30.

3. Alford and Beatty, loc. cit.

4. Charles Babbage, On the Economy of Machinery and Manufacturers, (London, Charles Knight, 1832), p. 137.

5. Scientific Management in American Industry, (The Taylor Society, New York, Harper and Brothers, 1929), p. 42.

6. L. P. Alford, Laws of Management Applied to Manufacturing, (New York, The Ronald Press Company, 1928), p. iii.

7. Henri Fayol, General and Industrial Management, (London, Pitman Publishing Corporation, 1949), p. 19.

8. Alfred Bornemann, "The Development of Economics and Administration in the School of Business," The Journal of Business of the University of Chicago, Vol. XXX, April, 1957, p. 139.

9. William H. Newman, Administrative Action, (New York, Prentice-Hall, Inc., 1951), pp. vii and viii. (Underlining is the writer's.)

10. American Association of Collegiate Schools of Business, Faculty Requirements and Standards in Collegiate Schools of Business, (New York, 1955), p. 151.

11. Charles E. Summer, Jr., Factors in Effective Administration, (New York, Columbia University, 1956), pp. 113-114.

12. Oliver Sheldon, The Philosophy of Management, (London, Sir Isaac Pitman & Sons, Ltd., 1930), pp. 33 and 34. (Underlining is the writer's.)

13. Dean Stanley F. Teele, Harvard Business School, "Knowledge and Wisdom in Education for Business," Dedication of Copland Hall, Ohio University, College of Commerce, April 1, 1957.

14. Ibid.

15. A mid-Victorian educator as quoted by Mary E. Murphy, Accounting Review, October, 1957, p. 637.

THE DYNAMICS OF INDUSTRIAL LEADERSHIP

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The survival of any enterprise or, for that matter, the perpetuation of society itself is contingent upon a constant supply of persons who are capable of wearing the mantle of administrative leadership.

It is generally accepted that the successful administrator is one who is capable of achieving enterprise objectives through the efforts of other people. This ability to channel and utilize human resources is a function of leadership and is, in fact, the "key to effective management."[1]

Leadership Defined

Traditionally, leadership was conceived as a type of innate, mystical quality granted only to persons who possess certain traits or characteristics. Writers have been quick to point out qualities that are essential for effective leadership without adequately establishing any particular patterns of traits which distinguish the leader from the non-leader.[2] But this traditional field of thought is a vacuum approach to what is a many-sided problem. It considers that leadership is purely an individual phenomenon without recognizing that acceptance from the group that is being led is a requisite for the attainment of leadership positions and is indeed the source of all authority. This traditional concept of leadership appears more and more untenable and completely out of context in a growing and dynamic industrial society which must constantly be able to adjust itself in an environment charged with changing social and economic patterns.

Perhaps a sounder approach to the leadership dilemma is embodied in the concept that leadership is situationally determined and that authority is granted to an individual by a group or an enterprise in proportion to the ability of the individual to satisfy the needs of that group or enterprise. Such an approach recognizes that leadership can best be considered as a "process arising out of a social situation."[3] Leadership, then, is not a permanent possession of a particular individual who has a stereotyped pattern of traits or qualities. Leadership is the temporary acquisition of a specified amount of authority granted by a group or enterprise to an individual who is considered by the group or enterprise as being most capable of satisfying immediate needs.[4] This authority is withdrawn and transferred to other individuals if the primary source of authority does not perceive observable progress toward goal attainment.

This concept, then, is based upon the hypothesis that there is no recognizable stereotyped cluster of traits or qualities which universally

distinguishes the leader from the non-leader, but that the group is the basic determinant of what qualities are directly related to effective leadership. Merriam expresses this concept when he states:

> Types of leaders differ with the social relationship in which they are set, with the tensions within these types, with the varying requirements of prestige and of ideology. The leader is a function of the social pattern and cannot be understood apart from it. And as there are many types of situations, and many degrees of tension, and many different ways of meeting the same problem; as, further, there are distinctions to be drawn between those who hold the power nominally and those who function through them, the conclusion is inevitable that there are many kinds of leaders and many qualities, dispositions, aptitudes, characteristics of these power possessors.[5]

If the traitist theory were valid, then any individual possessing certain traits or qualities could function equally well in all situations regardless of problems, conflicts, and other distinguishing factors inherent in particular situations.

Patterns of Leadership Attainment

Theoretically, a state of perfect social competition exists prior to the initial selection of a leader. In other words, all members of a group have the opportunity to attain leadership status and also have the opportunity to express certain preferences pertaining to the selection of a leader.[6]

Following this period of perfect social competition is the perfectly monopolistic stage in which the group is able to visualize its goals, and, by conducting a social audit, to select some particular individual who, in the group's opinion, is most capable of achieving group goals.[7]

The final stage, although not always reached, represents a period of imperfect social competition in which the person initially selected to fulfill a leadership function is able to build up about him a core of followers who are able to exert controls over other group members. Once an individual has succeeded in structuring this core of followers, he may be considered an agent of social control.[8]

With qualities necessary for leadership being socially determined, it logically follows that the role of leader is a tenuous one, determined to no small extent by the ability of the leader to "play politics." As Miller and Form indicate:

> An elected official who wants to stay in office must play politics. Politics, the art of manipulating people, is found in all groups where there is a competition for leadership. It is found in government, social clubs, business, and labor. It is not inherently good or bad but the normal and inevitable accompaniment of group life.[9]

An extension and further clarification of the manipulative aspects of leadership (as applied, in this case, to labor unions) is expressed by Barkin:

> Use of authoritarian administrative procedures is a violation of the trade union spirit, but capitalization of the office for personal advantage is an abuse of trust. However, this distinction is seldom drawn. Members are usually not sensitive to abuses until the opposition, maladministration or absence of progress in collective bargaining, or an outside group focuses attention on these activities.[10]

This manipulative concept of leadership is perhaps an over-simplification of the leadership process since it assumes that the values of the individual are more decisive than the values of the group in determining leadership tenure.

A more nearly acceptable concept might well be that the leader, especially in informal groups, is one who is able to manipulate or perhaps integrate his own values and needs within the more inclusive framework of group values and needs.

There is not, then, any rigid distinction between the leader and the group. The leader is a member of a group who, because of group consent, is able to represent the group in particular situations. Therefore his tenure as leader would be a barometer of group cohesiveness: frequent leadership turnover might very well indicate lack of group cohesiveness resulting from conflicts within the group itself. Leadership turnover would, in other words, be symptomatic of basic group disturbances.

Source of Authority

It is of special interest to note that managerial leadership is dependent upon the acquisition of authority from groups higher in the organizational structure than the person appointed as a leader. In labor unions, however, the source of authority is in the hands of the workers. Miller and Form indicate:

> Workers are a definite part of the structure of the union local. Theoretically, they occupy the highest rung of the structure because union officials are directly or indirectly responsible to them. If the workers are determined and organized, they can control the behavior of their officers and the policies of their union.[11]

The pattern of managerial leadership is a reflective phenomenon, that is, subordinates tend to assume the leadership patterns of their superiors. Suppose, for example, that individuals at the supervisory level are involved in a training program pertaining to human relations or leadership development. The skills gained as a result of this program can be applied only to the extent that these skills are accepted by individuals who occupy superior positions in the organizational hierarchy. In other words, the behavior patterns of individuals in subordinate positions tend to reflect the behavior patterns of their immediate

superiors.[12] Continuing with this analysis, the behavior patterns of those in high status positions are perceptible even in the behavior patterns of those who, in turn, report to these subordinates.

Labor union leadership, however, is structured about worker-group requisites, and may not be nearly so stable as managerial leadership because of the many complexities involved in providing what the group considers to be observable progress toward predetermined objectives. Because of the constant pressures from union members it is often necessary for union leaders, especially those who must "prove" their worth to employees--and this proving sometimes appears to be an almost continuous process--to maintain a perpetual battle with management in order to assure union members that they, the union leaders, represent the means for attaining worker needs. The intensity of this labor-management conflict is often governed by the union's concept of how, or to what extent, the union is recognized by management.[13]

These concepts of emphasis upon the basic interrelationships between the leader and the group, the importance of goal attainment in leadership tenure, and the maintenance of group cohesiveness are vividly expressed by Cattell in his definition of a leader "as a person who has demonstrable influence upon group syntality."[14] Syntality signifies for the group what personality does for the individual.[15]

Operating from this frame or reference, every individual has some effect upon group syntality, but the leader is the one capable of exerting the greatest influence.[16] Leadership, therefore, is not the bringing together of the leader and the non-leader for the purpose of goal attainment. Leadership implies a more dynamic and certainly more basic relationship between the leader and the group: Leadership exists only to the extent that an individual, working within the framework of group values, is able to direct the activities of a group toward certain more or less common objectives. The need for satisfaction of group and not only leader needs is inherent in such a concept since, as was previously indicated, leadership tenure is dependent upon the ability of the group to perceive observable progress toward given ends and to recognize that the current leader is an effective instrumentality in achieving such group goals. True leadership therefore can, and must, transform a group from a mere collection of individuals into a vital force capable of goal attainment to a degree not possible in the case of an unstructured collection of persons.

The need for group satisfaction has been positively asserted. It should be recognized, however, that once an individual attains a leadership position it is possible for him to use this initial leadership position as a stepping stone to positions of greater significance in the status hierarchy by structuring about him a core of followers who are able to exert certain controls upon other groups and sub-groups. This recruitment of disciples, however, implies also the satisfaction of their needs within the broader framework of the group's values and the values of the leader.

Who is a Leader

Every one may be a leader in certain situations. A leader may, among other things, be honest, industrious, ambitious, loyal, dishonest, lazy, deceitful, physically strong, technically competent, poorly dressed, or sophisticated. Leadership traits or qualities are adjudged acceptable or unacceptable by each group according to the nature of the particular situation. The leader is the "deus ex machina"--the means of the moment--by which group satisfaction is achieved. The possession of formal authority alone is not a valid index of leadership ability. A leader is one who can wield authority and still be accepted by the group.

Miller and Form explain this idea in the following words:

> Top management is an authority-conscious group. Men at the top of the supervisory structure are consumed with decision making and commanding. Yet they do not like to believe that men obey them because they have power. ...In meetings of business executives one or two speeches are invariably devoted to the importance of leadership, the techniques of leadership, and the role of leadership in industry.[17]

In other words, leadership and authority are not synonymous. One may have formal authority and not be a leader, but one cannot be a leader without authority, recognizing, of course, that this authority is often not formally conferred upon the individual but is often awarded to him by segments of the informal organization.[18]

A leader, then, is one who is recognized as a leader by the group and is able to perform effectively in this group determined role. The leader is not a marginal individual within the group. He must be fully accepted by the group and, in turn, must function within the framework of group values.

This ability to function within the framework of group values is a human relations skill--a skill required of all leaders in all situations regardless of the pattern of leadership techniques employed. A leader, then, is one who is able to analyze the social interrelationships that exist within a group by consciously or unconsciously conducting a social audit of group skills, abilities, and attitudes for the purpose of a more effective realization of group needs.

The Development of Leadership Skills

Individuals are not innately endowed with certain traits which make them leaders any more than individuals are born physicians, lawyers, or educators. Leadership development is part of the socialization process, just as leadership itself is a group rather than an individual phenomenon.[19] Leadership, in other words, is something that can be learned.

The problem, however, is how to teach leadership. Leadership skills cannot easily, and certainly not realistically, be taught in the stereotyped,

formal learning situation. What is needed is the structuring of a learning climate that is charged with realism. The proper utilization and application of sociodramatic techniques may provide this much needed realism.[20]

A Continuing Dilemma

Perhaps a basic weakness in solving the leadership dilemma is the fact that there is lack of agreement pertaining to what constitutes leadership. A partial solution to the problem of defining leadership might be effected if the gap between what experiments indicate and what stereotyped judgments dictate were lessened.

There is a strong tendency to present a "packaged" approach to leadership which suggests that a leader is literally a human dynamo possessing universal leadership qualities, qualities which enable him to bring about effective co-operative effort in all situations. This is, in my opinion, a secure, but completely spurious, approach. That it remains in great vogue is surprising when one considers that it seems to be in direct conflict with what has been ascertained through scientific experimentation.[21]

In order effectively to cope with the leadership dilemma, there must be some meeting ground between the "theorist" and the "hard headed" practical man. This realization of a meeting ground, a point of agreement, is, in itself, a leadership problem. It is a problem in communications, a problem of agreeing upon certain words, upon particular symbols which will mean the same thing to the practitioner and the theorist.

Although there is great opposing contention and even confusion pertaining to what constitutes leadership, there is consensus that effective leadership is so important that it is necessary for the perpetuation of any enterprise. An enterprise, or even a civilization for that matter, depends upon a continuous supply of persons capable of controlling and resolving the inevitable conflict situations that will arise in the dynamic circumstances in which we live. The executive development programs under the aegis of educational institutions such as Stanford University recognize this need. Stanford's program is structured about the realization that of all the many problems facing top business management "none is more vital than the training and development of key personnel."[22] Supporting this concept, the executive training program at the University of North Carolina assumes that "the discovery and development of key personnel is perhaps the most vital problem facing the top level of business management."[23]

Enterprises, then, are perpetuated to the extent that they are able to employ and train individuals capable of assuming managerial roles, and the securing and development of these individuals is a continuous and ever challenging process. A skill in this process is, in fact, one of the leadership techniques that must be mastered by today's leaders in business and industry

if continuation and improvement of our complex and ever changing industrial society is to be assured.

FOOTNOTES

1. Harold Koontz and Cyril O'Donnell, Principles of Management, (New York, McGraw-Hill Book Company, 1955), p. 64.

2. Henry Clay Smith, Psychology of Industrial Behavior, (New York, McGraw-Hill Book Company, 1955), p. 209.

3. Joseph S. Roucek, Social Control, (New York, D. Van Nostrand Company, Inc., 1947), p. 278.

4. In formal organizations this leadership is dependent upon the acquisition of authority from groups higher in the organizational structure than the person appointed as a leader.

5. Charles E. Merriam, "Political Leadership," in Richard C. Snyder's and H. Hubert Wilson's Roots of Political Behavior, (New York, American Book Company, 1949), p. 141.

6. The analogy between leadership at the formative stage and perfect competition was suggested by Dr. W. Rogers Hammond, of Georgia State College. Further clarification as well as a basic framework for this comparison is provided by Albert Meyers in his Elements of Modern Economics, 4th edition, (New York, Prentice-Hall, 1948).

7. For purposes of effecting a model for the analysis of leadership attainment, the group is considered here as a type of self-centered social organism which, above all things else, is desirous of satisfying its needs. The needs of the group must of necessity be related to the myriad of needs possessed by the individual members of the group. Therefore, recognition of group needs serves as a basis for the selection of that individual who, according to group judgment, is most capable of enabling the group to satisfy its needs and attain its goals.

8. Roucek, op. cit., p. 4.

9. Delbert C. Miller and William H. Form, Industrial Sociology, (New York, Harper and Brothers, 1951), p. 255.

10. Solomon Barkin, "Human Relations in the Trade Unions," in Research in Industrial Human Relations, Industrial Relations Research Association, No. 17, (New York, Harper and Brothers, 1957), p. 211.

FOOTNOTES (CONTD.)

11. Miller and Form, op. cit., p. 246.

12. It should be recognized, however, that individual beliefs may not be directly evidenced through an analysis of these behavior patterns, since there are often differences between what we know or "feel" to be right and the way in which we actually respond in social situations.

13. The union members' concept of acceptance may be structured as much upon management's social acceptance of union leaders as peers as upon the formal acceptance of the union as prescribed in collective bargaining agreements.

14. Raymond B. Cattell, "New Concepts for Measuring Leadership in Terms of Group Syntality," in Group Dynamics, Research and Theory, ed., by Dorwin Cartwright and Alvin Zander,(Evanston, Illinois, Row, Peterson, and Company, 1953), p. 24.

15. Raymond B. Cattell, "Determining Syntality Dimensions as a Basis for Morale and Leadership Measurements," in Groups, Leadership and Men, ed. by Harold Guetzkow,(Pittsburgh, Carnegie Press, 1951), p. 17.

16. Cattell, op. cit., p. 25.

17. Miller and Form, op. cit., p. 195.

18. If, in effect, and this is admittedly highly improbable, all managers were leaders and conversely all leaders, managers, then no distinction would exist between the formal and the informal organization. It is assumed, however, that most managers possess some measure of what is commonly called leadership ability.

19. Perhaps, a more palatable concept is that individuals might be endowed with certain qualities that make them more "leadership prone" than others. What these qualities are, however, has not been positively ascertained. Quite possibly these unknowns can be fully realized only in particular environmental climates.

20. The analysis of sociodrama as a device for developing leadership, although a challenging undertaking, might be more effectively discussed in a separate article.

21. Kurt Lewin's classic experiment of patterns of group control is as a bellwether in this area. See also Henry Clay Smith, op. cit., Chapter 9.

22. Graduate School of Business, Stanford University, Executive Development Program (1956), p. 1.

23. School of Business Administration, The University of North Carolina, The Executive Program (1956-1957), p. 2.

GETTING THE MOST OUT OF POLICY CASES

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The basic advantages of the case study method of instruction over the more conventional approaches are twofold. The first advantage lies in the opportunity it provides the student to learn how to diagnose company problems. A typical policy case will contain a minimum of twenty pages of descriptive material. From this large amount of material a student must select the problem areas. When a large number of problems is found within a case, the student must go a step further and determine the most significant problem. This selection is necessary, of course, because usually one or a few problems hold the key to the future success of the enterprise. Too often attention is focused on problems that are of minor importance while the major problems are either ignored or given too little emphasis.

The second advantage of the case study method of instruction is the training it gives the student in the formulation of decisions that will guide a company to proper action. It is expected, of course, that every recommendation will include a statement of how the plan is to be implemented.

The success of a policy case, to a very large extent, is determined by the accuracy and completeness of the case material and the skill and thoroughness of the student's preparation. It is the case leader's responsibility, of course, to select proper cases, to stimulate students in their work, and to direct the case discussions in class. Unfortunately, case material becomes outdated rather quickly and frequently much useful information is not provided. Furthermore, if the case study is to be most effective, the student should have some measure of the soundness of his decisions, not only from the logic of his decisions as measured by his classmates and professor, but by the actual test of the business environment in which the decisions would be implemented. This is an important consideration because, if this test is made often enough, the student should get a better feel for the vagaries of the business environment in which future decisions will be made.

A solution to the problem of inadequate data can be attained by holding the student responsible for any decisions or assumptions made which are in conflict with information available from standard reference sources. A case that is several years old can serve as the best vehicle for testing the soundness of a student's recommendations. One approach found particularly useful is to make the normal case assignment regardless of the terminal date of the case. For example, the F. W. Woolworth Company Case, the Ex-Cell-O Corporation Case, and the Superior Separator Company Case, all found in Policy Formulation and Administration by Smith and Christensen, end in

1947, 1950, and 1950, respectively. The case is fully discussed in class and, as usual, each student is required to hand in his analysis and recommendations. But the assignment for the next meeting would be to bring the case up to date as completely as possible.

By using such references as Standard and Poor's Corporation Records and Moody's Industrials the student can bring the financial statements up to date. Frequently, changes in the membership of the board of directors and major company officers as well as the company's acquisition or sale of property, recent consolidations and mergers, and changes in the nature of the business can also be obtained from these sources. Additional sources of information pertaining to all operational aspects of the enterprise can be obtained from magazines, journals, annual reports, interviews with company representatives, or by letter.

This assignment may take the form of a group project. This will conserve time and will make it possible to obtain as much information and as many data as possible. With the new information available, each student is then asked to compare his previous recommendations with the actual decisions made. Where serious discrepancies exist, he is asked to reconcile the differences. This approach not only provides the student with a test of his decision-making abilities, but also points out the various considerations to which he may not have given proper attention. The difficulties inherent in attempting to predict future market conditions would also become evident to him.

The ideal condition for such a program exists when the name of the company is known (as in the cases cited above) and information concerning the activities of the company are reasonably easy to obtain. This approach is recommended if used only two or three times during a semester course, if for no other reason than the added enthusiasm it gives the students.

A modification of this approach is useful when the identity of the company is not known or when current information about the company is not available: a very large number of decisions made by students regarding such problems as plant expansion, product diversification, national distribution, and the like is conditioned by their expectation of future market trends for the industry under study. The soundness of their decisions can be tested by actual comparison with recent market conditions. For example, the problem of product determination for the Advance Aircraft Company as described by Smith and Christensen was centered around the future market expectation for carpet sweepers and magnesium products, especially ladders. The case ended in 1947. It is relatively easy for students to discover the changes that have taken place in these items and their market expectations in recent years.

Occasionally a representative of the company being discussed may be available as an observer. More frequently, a representative of the industry is willing to sit in on the class discussion. In either case, a good opportunity may be provided the student for testing out his proposals on a face-to-face basis. Cases dealing with such enterprises as variety chain stores, bakeries, and drugstores all lend themselves to this approach.

ELECTRONIC DATA PROCESSING FROM THE MANAGEMENT VIEWPOINT

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The American enterprise system is at the beginning of what promises to be another phase of marvelous growth and development. Among the important factors impelling the forthcoming acceleration are "operations research," "nuclear energy research," "marketing research," "automation," "creative thinking," and "electronic data processing." The present article is written as an introduction to electronic data processing from the company-wide management point of view.

The term "electronic data processing" means different things to different people. Basically it implies two distinct things to top executives: First it is a system and second it means equipment. From the overall company point of view the system represents a new concept in the availability and flow of information required for decision making and executive control. As such, this aspect must be viewed together with the physical manifestation--the computer itself. This combined viewpoint will be used in this paper.

Two types of computers should be distinguished; these are the analog computer and the digital computer. The analog computer is used almost solely for scientific research in the physical sciences. Calculations are made electronically by varying physical phenomena such as distances, temperature, voltage, and resistance. In this respect, the analog computer is somewhat like a slide rule or a graph. Like them, the analog computer provides answers that are accurate only to the first three, or possibly four, significant digits.[1] In contrast, the digital computer is something like a table of figures or a desk calculator in which all digits are handled individually. Typically, up to ten or more significant digits are available.[2] Analog answers are accurate in the statistical sense while digital answers are exact in the accounting sense.

Because analog computers are used mainly in solving specific physical problems involving several or many variables, they do not have company-wide implications as do digital computers. For this reason the remaining discussion relates only to the electronic digital computer, which is usually considered to be the heart of any electronic data processing system.

Digital computers are customarily classified as being small, medium, or large. Small computers, such as the IBM 604 or the Univac 120, are in the $50,000 class. Although they can be used for a wide variety of problems, large problems require so much time that small computers are generally assigned only isolated segments of work. Thus, they are typically used for small, selected jobs such as payroll calculation, inventory control, sales determination, and like items.

Medium-sized computers, such as the I.B.M. type 650, the Datatron, and the Univac File Computer are in the one-half million dollar range. Each employs a magnetic drum for the storage of the data to be processed and also for the storage of instructions for processing the data. Large scale computers, such as Bismac, Datamatic, I.B.M. 705, or Univac II, are in the $3 million range. They have magnetic cores, cathode ray tubes, and other devices for storing both the data to be processed and the instructions for processing the data.

Both medium- and large-scale computers can do, and are used for, a wide variety of integrated problems. The major advantage of the large-scale computer is its overall speed and flexibility.

Among the several computers there are some which were designed specifically for scientific problems and others designed specifically for business problems. However, most computers are, or can be, used interchangeably. The factor which management uses to decide between the "business" computer and the "scientific" computer is the present and future proportion of scientific problems to be solved compared with the processing of business data.

The essential difference between the computer built for scientific research and the computer used for processing business data lies in the ability to handle external data and internal data. In the case of business use of data, the typical problem requires little or no calculation. The requirement is for a fast method to bring external data into the machine, to do calculations on these new internal data for a split-second and to get the data out of the machine quickly. Contrariwise, in the scientific computer, with only a few data the machine may have to compute for several minutes or even hours in order to bring out a few data as answers. The handling of external and internal data is described later in this paper.

To give the reader a rough idea of what is meant by capacity of these machines to do work, consider a calculation project which might take a man his whole life time using paper and pencil. The use of a desk calculator might reduce this time to one year. The use of a small computer might reduce the work to a month. With a medium-sized computer the work might be reduced to a few days, while the work could be reduced to a few hours with a large scale computer. It is this large-scale computer which will now be discussed.

An important point is that the large scale computer is not necessarily a single piece of hardware. Rather, an electronic computing system consists of a basic computer unit and possibly as many as 25 other expensive units. In some large installations there may even be several basic computer units. Monthly rentals of electronic data processing equipment can range from a few hundred dollars for a small system to over $100,000 for a large computing system. On top of this, the monthly payroll for computer personnel can in itself easily exceed these figures.

Actually, these costs mean little as such. It is what the electronic system can do in terms of higher profits, improved quality, better reports, quicker decisions, and closer control of production and inventory operations that has relevance in any discussion of the subject. The above figures were mentioned merely to provide an idea of the magnitude of the investment problem that electronic computers imply and thus to stress the point that top executives as well as middle and junior management must ponder the subject as a possible major expenditure. Management decisions should be justified on an overall economic basis rather than on pure dollar amounts.

A data processing center provides three types of service. First, it can provide computation facilities to relieve engineers and others of time-consuming arithmetic calculation so they can devote their efforts to more important work. Second, it can provide computation facilities for solving scientific and statistical research problems. Third, the center processes business data arising in the day-to-day operation of the company and from these data prepares management reports.

An engineer might set up a differential equation representing a proposed heat-exchange design. He could decide to solve it numerically, using a desk calculator. This might take him several hours to get only a crude answer. However, without the availability of a computer, time boundaries might require that he use the crude solution. A computer might do the same work in a few minutes. But more important, in an hour or so, the computer could develop a much more highly refined solution that could lead to a far better heat exchange design.

As an example of statistical research, consider a nuclear energy problem requiring the coefficients of a multiple estimating equation based on 500 observations for 39 variables. Although many problems of this kind have been solved without a computer, each has required many, many man hours of work. However, a large scale computer would require only a few seconds to bring the data into its memory, about 20 minutes to manipulate the data internally, and a few seconds to write out the answers.[3]

In contrast, consider the business data processing problem in updating several million insurance policies, assuming the master file is on magnetic tape, the major storage medium for external data at present. It is obvious that only a small percentage of the policies--although the number may be large in absolute terms--will have any activity in a given week or month. The time-consuming element in this operation is the processing of all of the accounts from external data storage through internal data storage, and then out again into external data storage. It is necessary to process all of the data in order to find the policy accounts requiring changes to be made. After each routine updating run, predetermined reports can be produced based on the changes made. (It should be mentioned that developments in storage facilities show promise of greater efficiency in handling

data in external storage media.)

The next section is devoted to a more detailed discussion of what is meant by data processing.

DATA PROCESSING

In the field of electronic data processing the word "data" typically refers to a configuration of letters of the alphabet, numbers of the Arabic system, and certain typewriter symbols such as the decimal point, the minus sign, the question mark, and others. Because of this mixture, they are called "alphanumerics" or "characters."

These alphanumerics are combined to form "words," which the computer handles internally as a basic group. This designation of words is of primary importance in handling business information because the machine does not only handle numbers, but also such things as proper names, addresses, mnemonic stock designations, stock descriptions, quantities, prices, and other alphanumeric data. In the strictly scientific use of electronic computers, the numbers are the typical counting and measurement numerals which are usually thought of as data. Yet, even in scientific work, the computer frequently uses words which are not numerical. Thus in 1955 "a study was begun at the University of Michigan on the possibility of using MIDAC, the Michigan Digital Automatic Computer, to translate Russian scientific texts into English."[4] Here the data are largely alphabetic.

Briefly stated, the method of translation is to store the words of the foreign language and the corresponding English words. Thus, if the German expression, "Das Buch ist weiss," is to be translated automatically, the computer would pick up the word "das" and then it would compare it with the words in its memory. Once it located the word "das" in its memory, it picks up in a preassigned space the English translation "the." This word is stored while the computer searches for the English translation of "Buch." When the sentence is completely translated, the computer prints, "The book is white." This is an oversimplified description of automatic translation because all of the difficult complexities are not mentioned. Still the method outlined is fundamental to all language translation research.

In the following sections, the words and data discussed are assumed to be alphanumerics because alphanumerics are used in all business data processing problems.

Processing

The reason why the term "data processing" is used is that it distinguishes the electronic method from manual and mechanical methods of "document processing," which are currently employed by business and

industry. As an example of the difference, consider again the insurance company and one of its problems--recording changes on policies as they occur. Thousands of separate changes take place every month. In order to expedite record keeping, one manual method would be to separate all documents which represent the changes into discrete classes according to the types of change.

The documents within each class may be sorted and handled again and again. Eventually, the documents are put into some selected sequence and the changes are made in the master, control, summary, and other files using pen and ink, typewriters, and other kinds of machines. All of this would be called data processing, but it should be clear that much of the activity is in processing documents rather than data.

In the case of electronic computers, the information is taken directly from the original documents and typed onto magnetic tapes, either directly or indirectly through the use of punched cards. No regard to order is necessary. The change file of data is put into the computer, which then arranges the data in any predetermined manner. Documents need never be handled after the information is initially taken from them the one time. The data enter the computer and then the computer processes these data which, as explained above, are alphanumerics.

After the change data are put into ascending order by a key number, such as a policy number, social security number, or serial number, the old master file of data is combined with the change data and a new updated master file emerges. The files may then be used to obtain summaries and details desired for decision making and control purposes.

Again it must be stressed that in the electronic system data are processed, whereas in the non-electronic system documents containing the data are processed.

An Example

The following example is cited to give the reader a picture of the workings of a large-scale electronic, digital computer.

The aforementioned insurance company which has the information concerning all policies on magnetic tape faces the problem of making changes weekly. These changes may be the issuance of a new policy, the payment of the face of a policy, the recording of a premium payment, changing the name of a beneficiary, sending notice to a delinquent policy holder, or many others.

As each change is authorized by some executive, typists type coded information onto magnetic tapes or punched cards from the original document. At the close of the business week, all of the information would be sorted electronically so that the information is in ascending sequence by key number.

Then the change tape, last week's master tape, a tape of instructions, and a blank tape to receive the updated master file are mounted on tape units, which are tied electrically to the main computer unit. Blank tapes for control data would also be available.

When ready, the operator depresses a start button on a control panel. As a first act, the computer takes the instructions from the instruction tape and duplicates them in part of its central memory.

Then the computer examines the instructions one by one and does exactly what each instruction directs it to do in the correct sequence.

In the problem cited, the first instruction would probably require the computer to bring the first master file policy and the first policy change into its memory. Then the computer would be directed to compare both the master policy number and the change policy number. It is unlikely that the very first policy in the master file would be the one to correspond to the change policy number. If the two policy numbers are different, the computer duplicates the old master file policy information onto the blank tape as part of the new master policy file, and the machine continues its work: The next master file item would be brought into the memory and another comparison would be made. This continues until the computer finds two numbers that match perfectly.

When this happens, the computer checks to find what change is to be made. It then makes this change. If the change is arithmetic, the computer sends the information to an arithmetic unit where the necessary calculations are performed. The results are returned to the memory and then the computer writes out the up-dated policy information on the output tape following the other new master policy items already processed.

In addition to these routine, clerical-type operations, the computer can be instructed to compile all kinds of information useful for executive control and decision making. Information desired by marketing executives, actuaries, finance managers, personnel managers, and the payroll department may be obtained in detailed and summary form. Herein lies the big contribution of a computer to a company. Not only can routine clerical operations be done quickly, but, at the same time, executive control data are available currently. Further, data which were never before available may now be obtained easily and cheaply.[5]

PREPARATION FOR A COMPUTER OPERATION

There are four major steps in preparing for a computer operation. First is the top-management decision against or in favor of an electronic computer. If an evaluation of the cost savings and increased profits evidence

fails to justify the installation of a computer, the rational decision would be to delay action while continuing to study the problem. This has been the outcome of many computer studies. However, in the following discussion it will be assumed that the decision is favorable and that the result of the study has been top-executive authorization of an electronic system.

As a second major step, the company's overall system of planning and control procedures is broken down into specific business processes such as "requirements planning," budgeting, indirect cost control, work scheduling, and inventory control. The resulting identification of these specific business processes is typically a product of middle management.

Third, each business process is described in a precise and logical sequence of operations by a person called a programmer. The programmer would probably occupy a place in junior management.

Fourth, each separate process in the company is used to prepare a specific code which is written in the language of the computer. It is at the coding level that many college graduates will enter business in the future. This does not mean that it requires a college degree to become a coder, but rather that future executives of businesses will necessarily be involved to a large extent in data processing and the best training ground for beginning this work is in the coding department.[6]

Authorization

The fundamental problem facing management when electronic data processing systems are considered is the formalization of the whole system of company objectives in the areas where electronic data processing might be used. The difficulty is magnified because top executives often are prone to think that every one knows what the objectives are. However, when they set the objectives forth in written form they frequently discover that the objectives as stated require that the means to the end must change and that one of the biggest changes is in the paper system of data preparation, information flow, and executive reports.

To help management with this problem, each electronic computer manufacturer has a team of specialists whose work it is to make what are termed "feasibility studies" to help top management formulate the objectives of the company in regard to electronic data processing and in turn to relate them to the existing system of organization and to the system as reorganized to utilize the potential of the computer.

These top-level decisions have implications for all departments of the company and the committee that studies the problem should have representatives of all of the major departments of the company. The importance of this

point is underscored by the fact that while the electronic data processing system is completely flexible at the initial decision stages, once a decision is made to adopt a certain system, a good deal of rigidity is built into the system[7] due to the cost of making changes.

Although a well-integrated management systems study is a costly and time-consuming one, this will be more than compensated for after the computer is in operation. The time and effort spent may well prove worthwhile if only because the company policy in regard to data processing is re-evaluated and newly reformulated. It has been estimated that some 70% of the cost of converting to an electronic computer system is at this top authorization level. Some workers in the field even maintain that it is this redesign of the information and control system, and not the computer, which increases profits.

At this point in the decision, it is important to get all kinds of ideas and points of view. The executives would do well to use the "group ideation" techniques fostered by Mr. Alex Osborn of the Creative Education Foundation. This approach can pay dividends in bringing out things that are important to consider but that might be overlooked in the planning stages. As another approach, many people will agree that an operations research team of systems engineering experts can make valuable contributions before a system is authorized.

It must be stressed that, even after an electronic system has been justified and authorized, a company does not merely purchase a computer and put it to work immediately. The planning stage alone, after the proposal has been authorized, may take many man-years of work.

Processing Charting

Once the objectives of the company with respect to electronic data processing have been formulated, they may be used to draw up a general blueprint of company operations under the new system.

The general blueprint would include the major areas of reporting. It would also include executive control features. The general blueprint is then used to plan the details of each operating area of data processing. As an example, if the general plan calls for a morning report of all production and sales during the previous day, the system for reporting the data must be designed as a daily process. Because a picture is worth pages of explanation, these processes are typically presented in the form of process charts. The process chart is typically written in sentences and words that are understood by executives without detailed knowledge of electronic computers. As another example, if it has been determined that one of the policies of the company is to take all discounts but to pay the bill on the last day of the discount period, the process must be charted in advance before it can be readied for the computer.

These are simple examples only; yet they represent some of the detail necessary in the planning stages for electronic data processing.

Flow Charting

After the process chart has been approved by an executive, it is given to the programmer, who understands electronic computers, for flow charting. The flow chart, or block diagram as it is also called, is nothing but a symbolic representation of the "logical" computer operations required for the solution of a problem. The term "logical" is used by computer personnel to include operations such as adding, subtracting, multiplying, dividing, comparing numbers, testing for a minus sign, bringing data into storage, and trasferring completed results from internal storage to external storage.

The flow chart is an essential part of the computer operation rather than a part of the systems analysis. It is an important part of the electronic system because even simple problems which clerks would have no difficulty in solving with paper and pencil become so complex in a computer run that a flow chart is necessary for effective communication among data processing personnel. This technical subject will not be explored here.

Coding

Coding is the term used to designate the task of using the flow chart--which is designed to be intelligible also to the non-expert--to write instructions which will accomplish the objective and which are also intelligible to the specific computer used. In many businesses, flow charting and coding are both entrusted to the programmer and there is then no definite distinction between programmer and coder responsibilities.

In contradistinction to programming, coding is an extremely complex, technical type of work.[8] It has been found by the computer companies that there is little correlation between a person's level of education and his ability to do coding. It requires somewhat the same type of imagination and insight that is required for one to be a good chess player.

Coding is in its infancy, as is the whole industry. Many researchers are engaged in studying the theoretical aspects of coding. People who take courses in programming and coding at present are able to do things on the computers which were not even thought possible five years ago. Important changes are continually taking place.

Whereas the first two aspects of electronic data processing mentioned above--authorization and process charting--can be, and should be, studied without a specific computer being singled out, a study of coding really should entail one make and model of an electronic computer. The reason, of course, is that coding is a technical problem requiring specific symbols and definitions

which vary from one computer to another. The study of flow charting cannot be entirely divorced from a specific computer; however it is recommended that it, too, be studied without regard to a specific computer insofar as this is possible.

FUTURE GROWTH

Electronic data processing is a new field of vital concern to executives in business, industry, and education. Although business examples were stressed in this article, it should be remembered that scientific research and numerical analyses are also important services of a data processing center. All things considered, the electronic computer can be correctly regarded as the most advanced management tool yet developed.

In that the repercussion of electronic data processing methods will soon be felt by all companies both large and small, it behooves all executives to take more than a cursory interest in this subject. Executives who are thinking about this subject are well advised to study as much of the technical aspects of programming and coding as their time permits, because an appreciation of the technical complications will enrich their background of knowledge used in making decisions that involve costly electronic data processing systems. It must be stressed again that company-wide planning for a computer system should be undertaken by the executives of the company before a contract is signed for specific equipment. The year or so required to design the total paper system of information and control data is far more important than getting hardware that no one really understands. Related to this, the training of personnel is important, but space does not permit a discussion of this problem. Suffice it to say that without trained personnel, the computer is nothing.

In the next decade universities will probably become a dominant force in advancing the application of electronic computers to scientific research, numerical analysis, and to business data processing problems generally.

A difficult road lies ahead for all concerned because the growing pains associated with sudden, pronounced expansion and the effects of costly decisions will be felt for long periods of time to come. Yet the potential future of electronic data processing promises rich rewards to companies just beginning exploratory work in this area.

The sooner business, industry, and education leaders begin cooperative work in the field, particularly in delving deeper into the problems associated with electronic data processing, the smoother will be the resulting impact of electronic computers on American enterprise and on the individual companies concerned.

FOOTNOTES

1. Recent developments in design are extending the number of significant digits and the kinds of applications of analog computers.

2. The number of digits depends on the design of the computer. Some are fixed at 10 or 12 while others are variable. If necessary, numerical methods can be used to increase the number of digits handled.

3. One of the best sources of developments in the scientific use of computers is The Journal of the Association for Computing Machinery, published by the Association for Computing Machinery, 2 East 63rd Street, New York 21, New York.

4. Andreas Koutsoudas and Robert R. Korfhage, "The Computer as a Translator," Michigan Alumnus, Autumn, 1956, p. 35. Automatic language translation is being studied at several universities. Fordham was among the very first to make such studies.

5. This paragraph describes one of the most important management uses of computers in modern business. A whole article could advantageously be devoted to "computer and control."

6. An authority in the field wrote, "College graduates should be entering this scheme at the junior management level; though many will probably enter at the coding level. Coding is more a clerical problem, and college graduates should be so prepared as to be entering what is described here as the programming level."

7. The word "system" as used here includes all of the attendant services, personnel, computer programs, computer routines, control data, schools and training, employee testing, and installation employees, which are as vital to a company as the equipment itself. A historical development of equipment systems is contained in Haskins and Sells, Introduction to Data Processing, (New York, New York, 1957).

8. All computer manufacturers supply customers with coding and programming manuals. An excellent general reference is D. D. McCracken, Digital Computer Programming, (New York, John Wiley & Sons, Inc., 1957).

EXECUTIVE DEVELOPMENT PROGRAMS

(Panel Discussion)

Michael Jucius, Ohio State University, Chairman

Franklin Folts, Harvard University
Hoke Simpson, Columbia University
Howard Johnson, Massachusetts Institute of Technology
Richard Donham, Northwestern University

PREFACE

BILLY E. GOETZ

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

A few years ago the Academy of Management decided to define "management" broadly, to include all management: sales management, production management, financial management, office management, top management, and so on. It decided not to limit the Academy to teachers in management departments of schools of business. This suggested that the annual program held in Pheladelphia, Pennsylvania on December 28, 1957 be broad enough to interest all teachers in schools of business (and public) administration. And one educational problem seemed particularly urgent and deserving of our immediate attention.

Executive development programs have developed so rapidly and have made such significant contributionsto better management, that the entire morning session was devoted to this subject. To get a somewhat representative sample of what is being done, directors of four rather different programs were invited to present a panel discussion. It was expected that enough other programs would be represented in the audience to provide a lively discussion following the formal panel presentation, and a very gratifying audience participation did indeed develop.

Some of the comments of the four panelists are included in the following pages.

PANELIST NUMBER I

FRANKLIN FOLTS

HARVARD UNIVERSITY

Introduction

Harvard's non-degree business programsconsist of advanced management programs here and in Hawaii, a trade union program, the Harvard-Radcliffe Management Program for Women, a program for foreign professors, a program for college presidents and their wives, and several others. Most of these programs are well known to Academy members.

Characteristics of Participants in Middle Management Program

The most recent of these non-degree courses is the Middle Management Program, the fifth of which began on January 6, 1958. The characteristics of the participants in the Middle Management Program are significant. These men are 28 to 35 years old, and have had from five to ten years of business experience. They are company sponsored. This means that the men are official representatives of their companies, and are company financed. Candidates are nominated by their companies and selected by our admissions board. There are no formal educational requirements, and the total enrollment is 60 for each session. The duration of the program is 30 teaching weeks, six days per week. The men in the coming year's program will represent 38 companies and two government agencies, and will come from 19 states and six foreign countries. Their fields of experience are varied, including marketing and sales, production and engineering, accounting, finance, labor relations, purchasing, office management, research, general management, military services, and federal government agencies.

In terms of the factors of administration, what administrative knowledge, attitudes, and skills do these men possess when they come to Harvard?

Knowledge: As to business knowledge in some one, rather restricted area--usually a functional field like advertising, purchasing, sales, production control, or production engineering--these men have outstanding expertness. But they are very narrow. Outside of this one area they are relatively ignorant. Their greatest knowledge weaknesses are in the areas of financial and control accounting and operating and corporation finance. Perhaps an average of 5% are competent in these areas. They cannot interpret balance sheets, or interrelate operating statements with balance sheets. Their understanding of these ranges from zero to routine familiarity with selected forms used in their own companies. They also have little or no knowledge of the cash-to-cash flow cycle, or the effect of depreciation on cash flow, which is either a mystery or something they never have run into at all.

Essentially, these men are without knowledge in the fields of operating and corporate finance. Pretty much the same can be said of them with respect to statistical and accounting procedures for purposes of managerial control.

In other words, with respect to the usual functional business areas, typically a middle management participant at Harvard is highly proficient in some aspect of marketing or production, and essentially uninformed in the areas of finance, accounting, and statistics.

We have seen enough of these people now to suspect that this is typical of young businessmen of the outstanding type which we are selecting for this program. They may have little or no understanding of the processes and problems of long range planning. Their experience rarely has necessitated their thinking beyond a single financial or operating period. They have very little or no understanding of organization or organizing. They have no clear understanding of management as a unique business activity in contrast to the work of business people who do not depend upon others for results. Delegation has no meaning to them. They are concerned and uncertain about the responsibilities of business to our society, a subject about which they know almost nothing. Characteristically, these people have expert knowledge in some aspect of marketing or production, and have a lot to learn before they are really knowledgeable outside their narrow experience.

Attitudes: As to attitudes, however, these are the most highly motivated groups we have ever seen. The people who participate in this program are success minded, dedicated to business careers. They expect to work, and like to have their time organized. They expect to have long days, always with some home work. Action oriented programs are "natural" to them, and when discussing business situations they are always involved--never are they the detached observers. They are competitive, but believe in cooperation. They want to know the answer to this ethics problem.

As far as they see it, their responsibilities to society as business managers are no different from the responsibilities of any good citizen. But if they are different, how are they different, and what are they expected to do about it? They have no objection to being judged against an absolute standard, but they do not like to be compared with each other, and consider college grading superfluous, indicating nothing. They are, as a group, in practically all things, much more concerned about the near future than about the long run, and in problem solving they tend to lack foresight.

These people feel certain that leadership is an essential to business success, but all that they have read and heard about it is just a mass of words, giving no real meaning. When they come to us, these men really think they are "good". They must be, is the attitude, otherwise the company would not

have sent them. And as regards their personal attitudes, they are one hundred per cent company men, completely loyal to their particular field.

Skills: Now, turning to the skills of application, we find three things to be emphasized: First, as indicated before, these men are "doers". Knowledge for its own sake has little or no value. Its function is to promote sound action. Second, in some one field of business activity these men have become outstandingly skillful. Finally, with very few exceptions, they definitely have demonstrated a top management potential.

The personal traits of those who come to us in this program are inclusive of a very high intellectual capacity, an ability to learn very fast, requiring less exposure to a new idea than the average, a capability to work very efficiently, carrying, for example, a 25% overload "as a matter of course." Their quickness amounts almost to a liability in some instances, in that their solutions to problems are sometimes reached too speedily. They are a job oriented group, rating their own work the top priority in their sense of values. They have a strong sense of group consciousness and group loyalty. As a group they are healthy, although we find too many already showing signs of stomach trouble.

The Middle Management Program in General

Our program has evolved from what we have learned about these participants. Figure work involves the heaviest portion of our schedule. Control (that is, statistics and accounting) and finance together utilize 175 class periods of one and a half hours each. Courses dealing primarily with people are second in importance, namely, courses like administrative practices and labor relations. These have over half as many class hours as the first group. Marketing and production each use about 70 class periods, and business responsibility in the American society absorbs 40 more. General management and business policy are scheduled for 30 double class meetings.

At a recent meeting of the program's instructional group, we discussed what we would do if we were forced to shorten the program from its present seven and a half calendar months. We decided that we would omit the two functional courses--marketing and production--and confine our efforts to the other subjects, which are more important to these participants. We are striving to provide an experience which will meet the needs of these very able young businessmen.

PANELIST NUMBER II

HOKE S. SIMPSON

COLUMBIA UNIVERSITY

I suppose that each one of us who has had a part in one of these programs, either on the administrative side or the teaching side, or both, has asked himself, "How are we doing?" And when we try to give a definitive answer to that question we, of course, find that we first have to answer another question, "What are we trying to do?" So--I would like to lead off my part of the discussion by talking about the objectives of Executive Development Programs.

Fortunately, most of the approximately forty programs in general business administration or general management--as distinguished from courses in a technical specialty--publish announcements or brochures designed to keep the business community informed about these programs. For this reason research relating to the objectives of the various programs was relatively easy. And it is interesting to note that, with only minor variations, all of us have substantially the same objectives:

1. "To develop a general management approach to the solution of business problems--an approach that goes beyond specific departments or functions to a companywide point of view."
2. "To develop a wider and deeper appreciation of the function of business in our social, economic, and political system." And sometimes, there is a corollary objective, "to develop a sense of the social responsibility of business leadership."
3. "To develop new approaches and attitudes for effectively meeting administrative problems in their technical and human aspects."

Certainly these are laudable aims--aims which seem likely to appeal to any company which is contemplating sending an executive to an outside course intended to aid in his self development. But when one thinks of these objectives as standards against which to measure results, it seems to me we are forced to ask ourselves, "What do we really mean?

If you are thinking that these objectives are not only commendable but also crystal clear--if you don't share my feeling of some slight confusion--then take a closer look at the length, the methods, and the content of a variety of the executive development programs with almost identical objectives. They range in length from two weeks to one year on a full time basis and to two years on a part time basis. Some use non-directive case study teaching methods exclusively, and some use lectures and reading exclusively, with an infinite variety in between these two extremes. Similarly, the content is

wide and varied. Many of the programs include a course on what might be called general business administration and a course in general economics, or general business conditions. Beyond that, one finds courses in accounting, in finance, in marketing, in statistics, in legal relations, and the like. And let me remind you again that I am talking about programs with almost identical statements of objectives.

It is not my purpose nor my intention to raise the question as to what is the right length of time or the best educational method or the proper course content. Neither do I want in any way to imply that some one who does not do it the way we do it at Columbia is on the wrong path. To the contrary, there is considerable suggestive evidence that many participants in each of these quite different programs have benefited greatly. It seems to me that there is less evidence that the benefits were necessarily in terms of the stated objectives.

The analogy of medicine and health is always an appealing one, and in looking at the present status of the executive development programs I am reminded of the spas of the early part of our century. Their owners said, "Come bathe in our hot springs and drink our mineral waters--you will feel better." Many people responded to these blandishments, either voluntarily or because they were sent. And many did feel better, though perhaps not always because of the curative powers of the waters of a particular spa. Today we are saying, "Come, participate in our program and you will perform better." Many executives respond, either voluntarily or because they are sent, and, interestingly enough, many do perform better, although I suspect this is not always because it was planned that way.

Let me reiterate that I in no way mean any of this as an indictment of any of the executive programs. I think we have made an excellent beginning in rendering a real and useful service to the business community in an area where even the need was scarcely recognized fifteen years ago.

I have painted this somewhat facetious picture as the background for a few suggestions as to what needs to be done. These things need to be done soon, and voluntarily--before we are forced into it by our customers.

1. First, of course, we need to continue working with our friends in the business community in a continuing study of what makes a good executive.

2. Second, we need to diagnose more specifically the developmental needs of the managers of American business; and, having diagnosed these needs, we must determine which ones can be better met on the job and in "in-company" programs and which can be better met by the courses and facilities of universities and colleges.

3. Third, we must decide which of these areas of executive needs is to be our particular province. I doubt that many, if any, of our executive development

programs can realistically be designed to meet all of the various developmental needs we shall find. It seems to me that we must be quite specific in defining our particular areas:

> If we're going to impart knowledge, are we going to include only the socio-political-economic environment in which business operates--you might say, a short course in modern economics--or are we also going to include accounting, and then statistics, and then marketing, and then financial management, and so on?
>
> If our purpose is to develop skills, do we plan to limit it to the skills of planning, problem solving, and decision making, or are we going to include practice in mathematical model building, and then in inter-personal relations, interviewing (with emphasis on how to listen), counseling, conference leadership, public speaking, and possibly reporting results to stockholders?

Many of us say our programs will develop new attitudes and perspectives--new attitudes about what, and perspectives in regard to what? Is it simply our objective to encourage participants to challenge the validity of some of their assumptions, perhaps re-affirming them, or do we know which attitudes they should have, and are we equipped to see that they leave our program with these particular attitudes? And along the same line, is there any place in university executive development programs for a kind of group psychotherapy?

4. All of these and many other questions need to be asked and must be answered. Having done this, we need to formulate more specific objectives and to communicate these objectives to the business community. Obviously, this does not suggest that all programs should be the same. Not only should there be great differences but there must be great differences in the programs--and the differences already exist. Since we cannot tailor our programs to each individual, it seems to me that we must tailor them to meet specific needs. Moreover, we must make certain that the business community understands our programs, so that they will send us the participant who has these needs.

Earlier I compared the present status of executive development programs to the watering places of the early 1900's. Perhaps an even better analogy would be to liken the programs to the science of chemistry when it was alchemy. Interestingly enough, no one I have talked to, either on the faculty or administrative staff of any of these programs, seems to feel that we have the lodestone which will transmute the leaden manager into the golden executive. I believe that we have too frequently given business the idea that we have such a lodestone. I suggest that we take steps to correct this impression before we are accused of being sorcerers rather than scientists.

PANELIST NUMBER III

HOWARD JOHNSON

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

The learning process is always full of complexities, and this is especially true in the development of executives in a university program framework. We are dealing with men of widely varied backgrounds who will return after a relatively brief exposure to vastly different environments. The educator's maxim, "study the learner," becomes difficult to apply, to say the least, where selection standards are, at best, rough, and even more roughly applied. The problem is complicated by the marketing aspects of these programs with their strong accent on the recruiting of participants. In addition to the variation within audiences, there are the normal variations in faculty inputs. The stated objectives, at least, of most programs read suspiciously and coincidentally the same. And yet, one gets the distinct impression that these hopeful objectives are met, if at all, by accident.

I propose to mention several problem areas in the general area of university executive programs around the country only briefly in view of the fact that each of our panel members will be doing the same. I will briefly comment on some factors that characterize an effective executive development program and state some facets of the problems of objectives, selection, faculty, and evaluation. I will take the point of view that results from executive development programs must become more predictable than they typically are now. I will presume that there will be hearty disagreement on some of the subtleties involved.

(First, as a kind of footnote, let me briefly state that our recent experience draws heavily on our two programs at Massachusetts Institute of Technology. The first, the Sloan Fellowship Program, is a one year program for exceptional young executives still in their thirties, leading optionally to the Master's degree in Industrial Management. This program, currently involving two groups of eighteen men chosen competitively, was begun in 1931, and is in its twentieth full year of operation. The second, the Program for Senior Executives, for executives in their forties and early fifties, is a ten week residence program. This program, involving twenty men in each session, is offered twice each year. Its history--four sessions completed--is a good deal more brief than that of the Sloan Program.)

If we can accept for a moment the basic notion that the education of managers in industry is a good idea and that the university setting has a contribution to make in this process, we find ourselves confronted with the two related questions: "What kind of education can the university supply this kind of student?" and "What kind of managers will most clearly benefit?" To approach these questions, I would like to start with the propositions that two

factors weigh heavily in any effective executive development program. First, carefully selected individuals with a record of success, with high executive potential, and with motivation to learn, who together will form an effective learning group; and second, an appropriate pace and rigor of curriculum plan, which in turn implies an effective faculty.

To put it another way, whether or not learning takes place depends on the characteristics of the individual, the effectiveness of the group, and the rigor and pace of the curriculum.

I would like to examine the implications of each of these factors. We start with purpose, which must be reflected, it seems to me, in curriculum. The purpose will not happen by accident. It is embodied from beginning to end in the curriculum plan. Part of this, of course, is a factor of the age of the participant. Lyndall Urwick has commented on this as capably as anyone:

> "There are at least two climacterics in the intellectual evolution of every young man worth worrying about.... The first usually occurs somewhere between 27 and 35 years of age. [I add three years to these for the armed service involvement, where it exists.] At this point a man suitable to go to the top should be forced to pause for a substantial period; I think a year is not too long. He should be sent back to the books and the theory, be relieved of the routine, and, above all, be given time for thought and reflection. He should be made to realize that sometime in the not very distant future he will be required to cross a mental crevasse--the immense difference in method between managing people and things that he can meet face to face, that he can touch and see, and administering groups of human beings from a distance, through other people.
>
> "The second climacteric occurs later, usually some time between 38 and 45 years of age. Again the individual has to cross a mental crevasse. He is coming to the point where he will be required to exercise top leadership in some business institution. Quite suddenly, he will have to change his whole outlook. It will no longer be sufficient for him to be a competent professional concerned with the internal administrative problems of his institution, skilled in dealing with the social group to which he is accustomed."[1]

I would put the emphasis of purpose in either of these cases on broadening the total understanding of the business process on the part of the participant. Mind you, I don't underrate specific skills and knowledge where the university can make obvious contributions throughout a man's career. This, too, is training in a very legitimate sense. But in an executive education program, the purpose should be one of helping an already good man internalize a broad range of considerations in approaching business decisions.

This is not vague generalizing but, rather, a hard-nosed building of a new balance of understandings of business decisions.[2] It implies what I

think is a second level of purpose, and that is to free the man to re-examine his assumptions about the way things work. Incidentally, I would guess that many programs seem to get favorable evaluation because the intermixture of participants over a period of time almost always produces such a re-examination. From the human side alone, such intermixture produces good practices in the quality of "cooperative aggressiveness" that seems to characterize good executives. There is no question, of course, but that specific know-how should be the result, but the overall balance is the concern I think we should have. Almost uniquely, the university as a neutral intellectual setting can provide the place where an upward-advancing executive can re-strike a balance of approach to a new range of problems. Finally, I think there is implied in this purpose the building of a certain intolerance to what exists merely because it has been successful in the past, a certain concern about change, and a base on which to think about it.

Next, I want to just briefly mention the choice of the individual and the concept of the whole group. We have found that the men who benefit most from the kind of exposure we give them are those who, in addition to having the action characteristics of a good executive, are intellectually curious. No program, even the long ones, can expect to do much in the role of a reformer. Nor can we do much with the lazy or the immature. We can do quite a bit with the self-satisfied as long as he has a reasonably open mind. In the Sloan Fellowship Program we take reasonable care to select the candidates, and, by and large, find that clearcut evidences of a fine management record in the past is a good prediction of effectiveness in the program. We are also finding that former Sloan Fellows, now vice presidents, do a good job of recommending candidates. The importance of educating men at this age is becoming increasingly clear to us.

In our Senior Executive Program we have the usual difficult time describing the man we want. By and large I think that the description of the man we want as one "who commits the reputation of his company" has been the most effective one for us. Along with clarifying other expectations on his part, we make clear to the applicant in all cases that the program involves a substantial commitment of the intellectual component as well as the time and energy components.

I want to point up the difficulty of assigning any great correspondence of our judgments based on his performance during the program and the man's future effectiveness. First of all, we simply do not, except in occasional cases, understand completely the demands of the environment to which he will return. I know of one man who we thought was marginal in his class, who has been amazingly effective back on his job. I know of another whom some of our faculty insists we hurt by widening his horizons so much that he was no longer effective in the limited action sense that his job required. A few weeks ago I asked a newly appointed vice president to come to one of our Sloan Seminars

as a speaker, and he said he was especially glad to do so, since he had been turned down for a Fellowship in 1940. That was a sobering experience for any selection board. Our overall record appears to be good, but I think we must constantly remind ourselves of our frailties in predicting so complex a system as the managerial one.

Third, the amalgam of the whole group is a powerful force in the productivity of any program. Our groups are small for purposes of discussion and individual attention. We choose as wide a variety of backgrounds as possible, therefore, to insure the re-examination process described above. I want to mention some details in this connection. The social psychological accoutrements of a program are important in giving it its class characteristics. If a program is held in a vacation paradise and the men dress in beachcomber attire, it is likely that the "rest and recreational" aspects as compared to the "intellectual reappraisal" aspects, will tend to win out. If the pace is languid and the demand low, the participants will soon understand what they are expected to do. Mind you, "evaluations" of the program won't suffer, but results will. In short, I believe that one has to keep in mind the kind of audience he seeks and surround these participants with the appropriate class patterns as an important secondary aspect contributing to the rigor of the curriculum. We purposely set a rigorous pace in a relatively formal setting. We ask the participants to manage everything but the intellectual framework as long as they stay within the class and pace level that we think contribute to the success of the whole.

Fourth, (but like Abdul Ben Adam, always first) the faculty must be good. Let me state some propositions. First, quality and rigor in the program are impossible without a first rate faculty. Second, we think that the members of the faculty should be an integral part of the school--in the sense that they have permanent participating commitments as members of a regular faculty. Third, the executive development assignment must tax the faculty. It must not be a second class involvement for them. For years the Sloan Fellow teaching assignments have been typically regarded as the best in the school in the sense of being a taxing, dynamic assignment. I would guess that when it is not so, any program will soon fade--as will any program that depends primarily on outsiders to constantly carry the main teaching framework.

Fifth, I want only to mention the problem of evaluation. It can hardly be doubted that much of the past effort has been aimed at justification, on some one's part--either the participant or the institution--of what exists. Much has been noticeably aimed at the market in a recruiting sense. We do not raise the university's reputation and proper role in the eyes of the business community by this kind of posturing. We should question more vigorously these efforts in the future. In the long run, the market will evaluate the programs and shake out those that do not meet a describably consistent need. And there is, I find, a great tolerance to most efforts as long as they show improvement.

In the short run, the best evaluation will, as in any teaching, be that of the self examining faculty operating within a consistent rationale. We have used the usual questionnaires and post discussions, and find them helpful for looking at specific details. But we have used the results of theses on the part of Sloan Fellows and the projects of the senior executives much more validly as an indication of short run gain. For the long run, Professor Douglas MacGregor has embarked on a study of Sloan Fellows in the more realistic context of their own management environment. It promises some usefulness for all of us.

In closing, I want to cite for the panel two considerations which demand our concern in this field. First, it is time for us to examine, in each context, how and where these programs relate to the university and, more particularly, to the business school. Too often they are special projects vaguely associated with the school, utilized poorly both by the faculty and by the regular graduate and undergraduate students. The increasing demand for education by adults and especially by managers (whose education, it seems to me, has always seemed eminently more feasible than that of business undergraduates) will force a clearer integration of this effort with other university activities in the future. Second, I should like to state the proposition that we must increasingly think of program experience as a whole in planning and staffing. A relatively short experience leaves a mixture of reactions, but, as time passes, a unified "fix" on the part of a participant remains. I always ask our ex-Sloans what they got from their year at "Tech." One man, several years later, put it this way, "I am more confident in facing complex problems because my analysis and approach will take more into account. I keep an open mind, understand all the basic factors I can in the time I have, and then act. And I understand something of the fantastic variability of situations and people." All the specifics have faded, but the method and the scope of the approach remain. If we spend more time on the design of this whole experience in relation to what our specific institutions have to offer and less on short run "evaluations" of specific segments, I believe we shall be in a better position to effectively meet the demand for executive education.

FOOTNOTES

1. Lyndall F. Urwick, Clarence B. Caldwell, and Mark W. Cresap, Jr., "How to Develop General Managers," How to Increase Executive Effectiveness, Edward C. Bursk, Ed., (Cambridge, Mass., Harvard University Press, 1954).

2. For greater detail see Howard W. Johnson, "Where Management Development Belongs," The Nation's Business, (June, 1957).

PANELIST NUMBER IV

RICHARD DONHAM

NORTHWESTERN UNIVERSITY

Formalized executive development, as the term is understood today, is almost entirely a phenomenon of the past decade.

In 1946 industry in the United States entered upon a period of prolonged expansion with an accumulated executive manpower deficit of heroic proportions. Five years of war following upon ten years of depression had left their mark. Further, to complicate matters, business units were becoming larger and more complex; decentralization called for generalists at lower rungs on the executive ladder than ever before; and the growing interdependence of corporations and communities, of business and national and international affairs, was becoming apparent to nearly every one save the editors of the Chicago Tribune. If, in the old days, managers in sufficient numbers had matured in the natural course of business, and replacements for top positions were always ready for the picking, such was no longer the case. Nor was the top executive of yesterday sufficient unto the new day. Science, with its customary irresponsibility toward the social consequences of its discoveries, had fashioned a need for managers with a quality of vision, foresight, and wisdom hitherto thought to be outside the requisites for managers.

Executive development programs, therefore, were born of necessity. That the colleges and universities should have been called on to help is a heartening indication of the degree to which mutual respect has replaced mutual suspicion between industrialists and educators.

To the extent that popularity is a measure of achievement, executive development programs in universities are eminently successful. The enthusiasm of attendees is virtually unanimous--so much so that corporate directors of management development find enthusiasm an unreliable gauge of the effectiveness of the experiences to which participants have been exposed. There has been a great increase in the number of university-sponsored, university-manned, live-in programs. Harvard stood alone in 1946; in 1951, it was Harvard, Western Ontario, Pittsburgh, Pennsylvania, and Northwestern; by 1952, Columbia, Indiana, Stanford, and Washington had joined the ranks; and the 1957 edition of the National Industrial Conference Board report on Executive Development Courses in Universities lists thirty-two. Even this report is incomplete.

There has been expansion, also, by universities already offering management programs in the direction of serving different age or responsibility levels or in serving similar groups in different ways. Harvard added its middle

management program in 1954; M. I. T. added its senior executives program in 1956; Northwestern, Virginia, and Harvard have worked out courses for the Young Presidents Organization, whose members represent predominantly small and medium sized businesses.

Few universities have withdrawn from the executive development field once they have entered it. Still, the better known programs are consistently over-subscribed and while there is no complacency among the directors and faculty members associated with the various university courses, there is considerable justifiable pride in the achievement to date.

Yet there is need for introspection. The job is far from done and what is done is far from perfect.

Many of the larger corporations have found university programs quite inadequate to their needs in terms of numbers. The universities usually want diversity in the memberships of their general management groups, and limit the number of men who may attend from the same company in a given session. So it is that firms increasingly are organizing executive schools of their own or are asking the universities to organize executive programs just for their own people. General Electric Company, for example, deemed it necessary to set up a school and campus on what had been the Harry Hopf estate. American Telephone and Telegraph Company maintains management programs at Asbury Park for its top and near top executives. It sponsors courses in the liberal arts for Bell System executives at Pennsylvania, Dartmouth, Williams, Swarthmore. It is underwriting a pioneer program at Northwestern in which the College of Liberal Arts and the School of Business work together to combine the study of art, literature, sociology, and business and social goals in such a way as to bridge the gap between the world of ideas and the world in which we live and work.

Other companies and business groups have turned to the universities to organize and to teach in live-in programs that are general rather than technical in nature. Here courses in human problems of administration assume a leading role. A few of those with which Northwestern's School of Business has been identified have been sponsored by Armour and Company, Pure Oil Company, Shell Oil Company, and the Illinois Bankers Association--the latter for presidents of Illinois banks.

In Caracas, Venezuela at the behest and initial financing of Creole Petroleum Corporation, Northwestern organized a three week general program for upper middle management. After the initial experimental session in 1956, this program was made available to other companies than Creole. Today it is in process of being gradually picked up by the Universidad Central de Venezeula and will be given entirely in the Spanish language by Venezuelan professors

within the coming year.

Several business schools, including Northwestern, have worked with many more companies and institutions within and without the United States. The demand, nevertheless, continues to outstrip all that the universities have been able to do. No stronger testimony to that fact exists than the prodigious volume of business enjoyed by the American Management Association in its truly remarkable multiplicity of courses and programs for management personnel from company presidents on down the line. The National Industrial Conference Board, numerous trade and professional societies, and a variety of private firms likewise serve their members and clients with educational fare in like manner if not on a comparable scale.

The question naturally arises whether the universities can increase their capacity by limiting their management development activities to what they can provide better than others. What can the universities do best? For one thing, they can provide an academic atmosphere. This is partly a matter of location and physical facilities, partly the presence of faculty people. For another thing, the universities can provide skilled teachers. Knowledge of a subject is not to be confused with ability to teach. The professional teacher with his ability to inspire through a lecture, his ability to lead a conference, or his ability to moderate a case discussion in such a way as to keep discussion orderly yet also to insure freedom of expression and maximum participation, has skills not easily duplicated by amateurs. For a third thing, university professors are old hands at wrestling with the problems of philosophical constructs without which a program has little meaning.

It appears, then, that universities are especially adapted to the broadening, "how to think," "know thyself," "be responsible" kind of program which is best suited to making generalists. Were they to remodel their programs with this objective more consciously in mind, the universities might both improve their efforts and expand their usefulness.

For inability to process sufficient numbers is not the sole shortcoming of university executive development programs. We may profitably question our quality too.

Query: Is the core curriculum of our collegiate schools of business the best basic medium for the development of executives at either middle or senior management levels? If one's main purpose is to make generalists out of specialists, is that purpose best fulfilled by serving up a mixture of functional or a mixture of specialized courses? Does the generalist executive need to know the substance of marketing management, operations management, financial administration, accounting and statistics, and labor relations as much as he needs to comprehend the nature of the problems and the points of view of the managers of those functions? Is a generalist as much a man with a knowledge of many specialties as he is a man with a habit of inquiry into the

unfamiliar, a habit of "whole seeing"?

Query: Is not an integrating idea requisite to a program designed to broaden an executive and to make him whole? Yet a review of university programs reveals collections of courses much more clearly than it reveals the catalytic thoughts behind them.

Query and comment: Do we too often deal with a man's beliefs destructively rather than constructively? In insisting upon objectivity, orderly thinking processes, breadth of view, and depth of inquiry we usually succeed in smoking a man out from many of his prejudices. Sometimes, however, we bring his house of beliefs tumbling down around his head. But man has a need for security, and he seeks the familiar. If we destroy his beliefs we must be careful to provide him with the basis for formulating new ones, which, when broken in, will fit him comfortably.

Reply: I believe that in executive programs as well as in bachelors' and masters' programs, business schools have shirked their proper responsibilities in developing capacity for value judgments. Our mania for the scientific method and for the specious accuracy of figures leads us to emphasize quantitative data and the quantitative approach to problems and to eschew qualitative data and subjective judgments. But we cannot escape value judgments, and value judgments are subjective. We had better have a mighty firm set of values on which to base them. I believe in right and wrong, in good and bad, in beauty and ugliness, in truth and falsity. I believe, too, that it is an educator's responsibility to help his charges to find ways to make such distinctions accurately in all circumstances. I do not believe we are trying very hard to do this today.

'WAY BACK WHEN*

ZACHARY U. GEIGER

APRIL 5, 1872

If workers think they have it rough today, they ought to take a look at the not-so-gay Seventies!

The following set of rules, unbelievable as they may sound to us today, actually existed in offices back in the 1800's. We thought you might enjoy reading them just for comparison's sake:

1. Office employees will daily sweep the floors, dust the furniture, shelves, and show-cases.

2. Each day fill lamps, clean chimneys, and trim wicks. Wash the windows once a week.

3. Each clerk will bring in a bucket of water and a scuttle of coal for the day's business.

4. Make your pens carefully. You may whittle nibs to your individual taste.

5. This office will open at 7:00 A.M. and close at 8:00 P.M. daily, except on the Sabbath, on which day it will remain closed. Each employee is expected to spend the Sabbath by attending Church and contributing liberally to the cause of the Lord.

6. Men employees will be given an evening off each week for courting purposes, or two evenings a week if they go regularly to Church.

7. After an employee has spent thirteen hours of labor in the office, he should spend the time reading the Bible and other good books while contemplating the Glories and building up of the Kingdom.

8. Every employee should lay aside from each pay a goodly sum of his earnings for his benefit during his declining years, so that he will not become a burden upon the charity of his betters.

9. Any employee who smokes Spanish cigars, uses liquor in any form, gets shaved at a barber shop, or frequents pool and public halls, will give me good reason to suspect his worth, intentions, integrity, and honesty.

10. The employee who has performed his labors faithfully and without fault for a period of five years in my service, and who has been thrifty and attentive to his religious duties, and is looked upon by his fellowmen as a substantial and law abiding citizen, will be given an increase of five cents per day in his pay, providing a just return in profits from the business permits it.

BE WORTHY OF YOUR HIRE!
Zachary U. Geiger, Sole Proprietor
Mt. Cory Carriage & Wagon Works

April 5, 1872

* Presented in this Journal through the courtesy of Acme Steel News, The Acme Steel Company, Box T 110, Riverdale Station, Chicago 27, Illinois.

THE THEORY AND APPLICATION OF THE MANAGEMENT GAME APPROACH TO TEACHING BUSINESS POLICY*

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One of the most important factors to consider in top-management decision-making is the dynamic character of the business environment in which the decision will be implemented. This paper describes a teaching "game" developed by the author to emphasize the dynamic character of business. The game also provides the opportunity to study the integrative aspects of business policy decisions. It has been successfully used last summer in an advanced management seminar and later in a graduate course in Policy Determination and Administration here at the University of Washington.

The idea for the game was suggested by the announcement of the American Management Association in the Spring of 1957 that they were preparing such a program. It was reported that their development cost was $50,000 and required the time of four skilled men for a year. The purpose and structure of the game was so interesting that it presented an exciting challenge to develop a practical arrangement for use in collegiate teaching.

Purpose

Gaming theory and application have received considerable attention since the publication of the pioneering work by John Von Neumann and Oskar Morgenstern.[1] The most intensive application has probably been the "war games" developed by the Armed Forces in which "battles" were simulated for analysis and teaching pruposes. The "business game" is a similar simulation of reality, designed to accomplish the following teaching purposes:

1. To give experience in decision-making in a dynamic, competitive business environment requiring the integration of many business forces from

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* Editors' note: In a recent Journal article, Lawrence A. Appley, President of the American Management Association, commented that "The A.M.A. decision-making course represents a major breakthrough in management training--a breakthrough towards an era of truly scientific management." (Think, New York, New York, International Business Machines Corporation, December, 1957, p. 6).

The above article by Professor Schrieber describes an interesting approach to the new decision-making game. Although space limitations and other considerations make it impossible to present a detailed description of all aspects of the game at this time, readers will be interested to know that Professor Schrieber is preparing for publication a complete description and analysis of the game with detailed instructions for manual or machine scoring.

the top-management point of view through the use of rational skills. It is assumed that the students participating are at the graduate or equivalent level with considerable background and skill in all phases of business. It may also be practical to use this game in an honors course for seniors. In addition the game is designed for use with mature and experienced businessmen whose academic backgrounds may have wide variation.

2. Emphasis is on developing a universal method of analysis or way of thinking about decision-making rather than developing specific strategy which may be successful in one situation but will fail for changing situations.

3. Practice is provided in the human relations aspects of reconciling different points of view among members of a team in order to obtain a positive course of action.

4. The specialist is given an opportunity to see the analytical relationships of his area to the other functional areas in the business. By this vicarious experience the specialist is required to broaden his point of view and learn sympathy, respect, and understanding for the decision makers outside his own narrow field. This, in turn, helps the specialist to be more effective in his function, as well as more useful to the business as a whole.

Description

The students are divided into teams of three to five members, each team representing a company. Each company has the objective of making the most profits in its industry. In assigning students to each company team, care is taken to provide a "balance" of background specialization; thus it is undesirable to load one team with a group of specialists, say accountants, while another team may lack members with such a background. In the game presently being used, the companies are assumed to be manufacturers all of whom sell the same semi-luxury product. Since these companies constitute the entire industry, an oligopoly situation prevails. The game is divided into "plays," each representing a period of three months in the company's history. A play consists of making a series of decisions which are evaluated by the instructor, and the results (showing net profits) are returned to each team to form the basis for the next play.

At the start of the game each company is in an identical position defined by a balance sheet. Each team also receives identical copies of business conditions, and the company decisions and the profit and loss statement for the previous quarter that have produced the present balance sheet condition.

For each play each team makes eight operating decisions as follows:

1. Unit price
2. Number of units of raw material to purchase
3. Number of units of production to schedule
4. Amount of money to spend on marketing expenses

5. Amount of money to spend for research and development

6. Amount of money to spend on market research information

7. The number of additional units of plant capacity to buy

8. The amount of plant capacity to be disposed of

As a controlling device each team is limited to spending total funds for expenses and investment for the following quarter in an amount that does not exceed the quick assets available at the beginning of the quarter.

In addition to the information regarding its own operations for the previous quarter, each team also has limited information regarding the action of competitors in the previous quarter. This includes the prices charged, which is obtained free, and other information, which must be purchased. The competitive information consists of the sales in units of each of the companies, the total expenditures of all companies together for marketing expenses, and the total expenditures of all companies together for research and development expenses.

Each team also receives at the start of each play an "econometric letter" containing basic business statistics that describe the general overall economic environment. Two of these statistics define conditions for the following quarter: unit raw material prices and average hourly direct labor rates. The remaining economic data that are furnished the players are historical. They include the gross national product, adjusted retail sales, an adjusted Federal Reserve Board production index, total bank debits, Consumers' Price Index, a wholesale price index, the Dow-Jones Industrial Stock Index, unemployment figures, average weekly factory earnings, and data on population. These statistics are similar to those reported in the Department of Commerce's Survey of Current Business and are presented with a time lag that corresponds to common practice. Thus, the statistic on gross national product lags by several months, while the datum on the Dow-Jones Industrial Stock Index is presented for the current date. The statistical series are structured so that their relationships to each other correspond to the actual relationships during a previous historical period. The figures, themselves, however, are camouflaged somewhat to prevent the students from identifying the specific historical period used.

Special Features

In designing the structure of the game there are several features that have been given careful attention. For example, care was taken that the game had a degree of stability so that one team could not "run away" with the game

by unusual or "gimmick" decisions. At the same time it was necessary that there be a proper degree of sensitivity so that each decision factor would have a noticeable and realistic effect on the results. It was also necessary to balance complexity and simplicity. A game that is too simple in terms of the number of variables will lack realism and lose student motivation, and will not be effective as a teaching device. On the other hand, a game with too many complexities prevents students from acting in a rational manner and turns the game into one of chance. Finally it was necessary that the game be designed to be practical in a collegiate environment in terms of scoring the results within the time limitations caused by class schedules, course requirements, and so on.

Clearly there must be enough plays for a team to develop a strategy based on a feedback of results from earlier decisions. On the other hand, the game should not be prolonged beyond its usefulness as a teaching device. It is also desirable that good strategy takes into account a long range point of view at the beginning of the game, which changes to a short range point of view as the participants know that the game is reaching its conclusion. The practical limits seem to range from eight to twenty plays, with perhaps twelve to fifteen plays being the optimum number.

Schedule of Class Time

Very little class time is required to play the game. At the start of the program the instructor can orient the class with about thirty minutes of explanation and discussion. No additional class time is required during the playing except to answer a few questions that may arise concerning the interpretation of the forms or of the rules of the game.

After the game is completed it appears profitable to spend from one to two hours interpreting the over-all results and analyzing the various strategies which were used. Experience has shown that the members of a team can spend as little as fifteen minutes or as much as six or eight hours to determine the decisions for each play. With mature participants having business experience in an advanced management seminar the average appeared to be about one hour of discussion for each play. In a graduate course with mature students who have had little practical business experience, the teams averaged between two to three hours of play. At the beginning of the game the teams spend considerable more discussion time on each play than they do at the end of the game.

The game has been used with two different time cycles of play. In the advanced management seminar, decisions were submitted by each team at 8:00 A.M. each day and scored during the day while the participants were in class. The results were returned to each team at 3:00 P.M. so that they could be used for evening discussion and further decision-making. In the graduate seminar the cycle of play was one week. The class met each Tuesday afternoon, at which time the results of the previous week's play were returned to the teams. The next three days were available for group meetings and discussion and the new decisions were required to be turned in on Friday morning. These were then

scored and returned at the following Tuesday's class session to begin the new cycle.

Scoring

The scoring of the results consists of four phases, or series, of computations.

In the first phase the total market for the industry is determined by linking the previous quarter's market to current general business conditions and price relationships, and to the total power of the industry's current marketing program.

The total market is then divided among competing companies in the second phase of scoring. This involves a consideration of company prices, marketing efforts, product attractiveness, and adequate capacity in terms of plant and inventories to service the available market.

The third phase of scoring consists of determining each company's unit costs. Unit costs are dependent upon expenditures for research and development, the cost of available capacity, and the proportion of this capacity which is actually utilized in production.

The data resulting from these phases are then used along with other facts in the fourth and final phase to determine the individual company profit and loss statement for the quarter. The profit and loss statement, in turn, forms the basis for establishing each company's new balance sheet.

The variables of the game are related to one another by means of a set of "hidden formulas" established in advance of the game by the instructor. While these relationships are necessarily arbitrary, they represent a possible set of conditions and relationships that are realistic and which might actually exist in the real business world. The constants used in scoring the game are the quantitative operating decisions made by each company and the statistical material available in the econometric letter. No variables that fluctuate purely according to chance are used. Scoring the play of a five-team game averages about four hours of time using an electric desk calculator.

Scoring by Means of Data Processing Equipment

It is possible for the scoring to be done on data processing equipment such as IBM. The American Management Association uses such equipment to score its business game presented for the first time in an executive decision-making course at Saranac Lake, New York, in October, 1957. While IBM equipment appears to have spectacular advantages for scoring in terms of accuracy and speed (A. M. A. scoring is reported to take less than five minutes) it does have some disadvantages that are neither desirable nor practical in many programs.

The A. M. A. program takes advantage of the speed of scoring by cycling each play on approximately a twenty-minute period instead of a one-day or one-week cycle. The procedure is supposed to create the environment of time pressure for those making the decision. But this appears to be unrealistic, since major decisions are not made after twenty minutes of study. Furthermore, from a pedagogical point of view this does not provide sufficient time for effective learning, which can result only from a complete and careful discussion of the issues at hand by all members of each team. There is also some benefit to be gained in the pauses between plays, during which time the student has an opportunity to digest and integrate the ideas from the game with the knowledge he has accumulated from other sources.

Even if an educational institution has the IBM equipment available, it still faces the long, complicated, and expensive job of programming the scoring so that it can be handled by the IBM equipment. In addition, there is the expense and scheduling problem of actually using the equipment for each play. It would appear that the four hours of manual scoring time, which can be done by a reader with a calculator, is much less expensive. In using IBM scoring procedures it may also be necessary to simplify the rules of the game and to make some of the calculations on an approximate basis. On balance, it appears that manual scoring is a very practical and effective way of handling this problem for most educational institutions. There is underway, by the author, however, a project to use an IBM 650 machine that retains the advantages and minimizes the disadvantages of machine scoring.

Variations

Each time the game is played the players themselves create new conditions. Thus the strategies used in one game may not necessarily be the profitable ones in another game. The instructor can change his hidden formula readily from game to game to provide further variation. It is also possible to structure new games that provide varied experiences by using different industrial settings, such as department stores, banks, or advertising agencies; different size relationships, such as large corporations, medium-size concerns, or small businesses; different competitive situations, such as an infinite number of companies, an oligopoly environment, or a monopoly situation; or different business conditions, such as prosperity, depression, or a rising or a falling market.

Another variation would be to change objectives. Instead of merely using net profits, it would be possible to establish success criteria using, in addition to profits, market position, production costs, and other measures. Such criteria could be weighted and combined to calculate a market valuation for the capital stock of each company.

Theory

The game is essentially a competitive or conflict situation in which the

teams have opposing interests so that, in sharing the market, the winnings of one team are the losses of another. The reward system, however, is more complex than merely "capturing the market." The sales gained by each company must be related to each company's cost structure determined by the operating decisions of each individual team in order to arrive at the payoff, namely, the net profit after taxes.

Some of the elements of action for each team are choices completely within their control, such as the expenditures for marketing or the price to be charged. Other elements controlling each team's profits are the decisions of competing teams whose objectives are inimical to each other. Finally, there are elements not under the control of any team, such as general business conditions.

Another important characteristic is that each team has only a limited amount of information concerning the forces at play. The criterion of success is the realistic one of long-term maximization of profits.

The structure of the game is not designed to require higher mathematical analysis such as developed for the simple two-person, zero-sum, finite games described by John Von Neumann and Oskar Morgenstern. Yet, aside from its mathematical simplicity, the business game is much more complicated than the simple models used to develop mathematical game theory. The techniques and strategies useful in the business game arise from those used by informed businessmen in a practical way. Among others, these can include an analysis of fixed and variable costs, considerations of elasticity of the market demand, projections of statistical trends, multiple correlations, and the analysis of income tax laws.

Conclusion

Within the limited experience to date it appears that the game has met its teaching objectives. Students have demonstrated enthusiasm and strong motivation in playing the game. They report considerable transfer of technical knowledge among members of a team. There also appears to be a gain in understanding the integrative processes involved in top-level decision making. The need for reconciling differing points of view has led to human relations learning in the discussion sessions. The specialist has discovered new vistas outside his field.

Business gaming is another new teaching technique that offers attractive possibilities for improved learning experiences. This new tool is, not intended to replace teaching techniques now in use. Its purpose is rather to supplement present methods through its emphasis on top-level decision making within the context of a dynamic environment.

CRITERIA FOR EVALUATING PROPOSED FRAMEWORKS OF A "GENERAL THEORY OF MANAGEMENT"

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There is increasing pressure on specialists in management to construct a general management theory. In fact, one might argue that a general theory has begun to evolve. Numerous classical attempts to construct a general theory have been made by such well known leaders as Taylor, Sheldon, and Fayol, and these writers have provided valuable points of view. In addition, present writers are providing publications which should provoke an acceleration in thought on the subject. Urwick, R. Davis, Simon, Newman, and Koontz and O'Donnell have offered rather comprehensive approaches to the theory of management. Many other management scholars have proposed variations.

The objective of this paper is to provide four criteria which should be useful in evaluating any proposed framework of a general management theory. These criteria are: (1) The framework must be broad, expandable, and elastic; (2) it must be consistent, but in such a sense as to accommodate what will be described herein as "conjugate principles;" (3) the framework should be supported by clearcut assumptions and premises which are explicitly stated; and (4) it must be useful as a basis for further research and for application by the practitioners.

Although many feel that there has been progress in the development of a theory of management in the last half century, there is still considerable frustration. The reason is that much of the theory of management has developed into groups of generalizations open to criticism on either of two counts. Either these generalizations are mere truisms offering little insight into the real essentials or they refer to specific techniques without sufficient qualifying assumptions to make them more generally valid.

There are those who criticize attempts to arrive at universals, claiming that we can only hope to seek answers to specific problems. But while it is unrealistic to claim that we possess at present anything like a universal framework for management theory, it seems equally unrealistic to claim that there is no reason to look for one.

The true value of seeking the ideal framework and of studying present attempts to construct one lies primarily in the better understanding which is gained in the process. A proposed framework may be useful to one person and not to another. It may be useful for one purpose and not for another. What is important is that each management specialist glean fundamental concepts of

management from all available approaches.

The first criterion of an ideal framework, that it be broad, expandable, and elastic and not restricted to a specific discipline, implies that the ideal framework be affected by many approaches.

For example, controllership and budgeting when broadly conceived provide (with their focus on assets and profits) what seems to be a basic approach to business management problems. This accounting approach has much to offer. But accounting has too often been considered to be a functional specialty rather than a part of general management activities.

Although economics, in turn, has something to offer, a purely economic model in the narrow sense of the term is entirely too restrictive: assumptions of an economic man and the profit motive are very useful tools, but by no means do they give a final "answer" to the problems confronting a manager who operates in the real environment.

The sociological approach, too, has much to contribute. But when used alone this approach has often become bogged down in descriptive techniques.

The management and business historian contributes an understanding of the institutional setting if he does not become over-awed with detailed facts. The management research analyst, too, has much to offer if he does not become carried away with his definitions.

The psychologist and the psychologically oriented sociologist have recently provided tools to help understand managers and employees as human beings. Research in small group dynamics,[1] the work done in human engineering, and the interests of the industrial psychologist all promise progress in managerial thinking.

Finally, the political scientist interested in public administration,[2] who is often also a competent sociologist, has contributed many useful ideas, which, in some cases, have been overlooked or ignored by business management scholars.

There are probably other areas of study, including general philosophy, that have much to contribute to a general framework of management theory.

The tendency of some writers to illustrate their frameworks with squares, circles, and other neat geometrical patterns is perhaps more deceptive than helpful.[3] These patterns with each space filled imply that they are complete, that there are no blanks to be filled in.

But the ideal framework should be more elastic. It is true that any useful theory should be built on a solid foundation, but while this foundation is

being built, it should be able to accommodate some movable walls and entirely new ideas. The moving and re-arrangement of the walls will probably be accomplished by the interplay of different scientific approaches; the additions and further re-arrangement will be the result of true creativity. Game theory, information theory, and operations research are some of the additions which are knocking at the door to be admitted as a part of a more general framework. The preface to H. A. Simon's revised edition of Administrative Behavior[4] is a lucid and important step in emphasizing the broad fields of knowledge that provide potential help in the quest for an ideal framework. Peter Drucker's provocative concepts of management in action should provide further realism to academic abstractions.[5]

The second criterion of an ideal framework involves the relationship of the principles within the framework. Writers are extremely conscious of the problem of maintaining consistency among ideas. Sometimes their attempts to be consistent lead to attractive generalizations that are true but that are mere truisms which elicit a reaction from the reader of "so what?". A. Lawrence Lowell's idea of conjugate principles[6] is of interest at this point in that it serves to broaden our understanding of consistency in principles. This idea is that principles by their very nature often appear as mutually contradictory or inconsistent and seem to be true only under specific conditions. An example in management would be the controversy between management theorists who wish to limit the span of control and those who see great evils in a "tall organization." Simon's concern about the obvious conceptual conflict of unity of command and specialization is another example of Lowell's conjugate principles idea. Lowell's concept directs attention to recognizing the assumptions, axioms, and postulates which are inherent in a proposed framework.

The third criterion of a good framework is necessarily related to the second. The framework should include its assumptions explicitly. Any valid criticism of a proposed framework would then take into account the assumptions of the proposal. Although the mathematical process of thinking facilitates such an effort, it is not the only useful approach. The major point to be made is that management theorists have yet to qualify rigorously their hypotheses and propositions. One seldom sees propositions in management writings which include qualifying clauses and phrases similar, for example, to those of the economist: under perfect competition, in the short run, for the individual firm, and so on--have we only one universal set of conditions within which management functions?

Most of the so-called principles of management may indeed need qualification concerning such matters as the size of the organization, its absolute past growth, the expectation of the future growth of the organization, the rate of this growth, the relative uncertainty of the future and therefore the degree to which events can be predicted, the personal characteristics of managers,

the institutional setting, and so on. Litchfield has included some of these qualifications as his third proposition in his article "Notes on a General Theory of Administration".[7]

The fourth criterion for an ideal framework seems also to be an essential one: The framework must prove to be useful to researchers and practitioners. The writer's dissatisfaction with available frameworks resulted from his attempt to force his terminology and assumptions on a practitioner who has not reasoned out his own philosophy. But we must be forever on the lookout for new ideas resulting from research and we dare not disregard ideas developed by the practitioner. The fences that we might build around our concepts may be effective in keeping out inconsistent ideas, but they may also obstruct our understanding of some of the fundamental dimensions of the framework we hope to build.

In summary, the pressures being exerted on academic specialists in management for a general theory of administration are great. The numerous existing proposals by management scholars and the researchers in other disciplines only partially fulfill the requirement. It is only good management to affirm that attempts to integrate the best aspects of these proposals must be guided by a conscious recognition of desirable criteria. The four specific criteria discussed herein seem to be among those of greatest importance in an evaluation of proposals to construct such a general theory of administration--and the development of such a general theory is one of the major objectives of the Academy of Management and its new Journal.

FOOTNOTES

1. See Cartwright, Dorwin and Zander, eds., Group Dynamics: Research and Theory, (Evanston, Row, Peterson & Co., 1953).

2. See A. Lepawsky, Administration, (New York, Alfred A. Knopf, Inc., 1949).

3. For an example see L. Urwick, The Elements of Administration, (New York, Harper and Brothers Publishers, 1944).

4. H. A. Simon, Administrative Behavior (Revised), (New York, The Macmillan Co., 1957).

5. Peter Drucker, The Practice of Management, (New York, Harper and Brothers, 1954).

6. A. Lawrence Lowell, Conflict of Principle, (Cambridge, Massachusetts, Harvard University Press, 1932).

7. E. H. Litchfield, "Notes on a General Theory of Administration," Administrative Science Quarterly, (June, 1956).

ACADEMY OF MANAGEMENT
NEWS AND NOTES

In accordance with the wishes of the majority of the Academy members who returned the questionnaire mailed out by Secretary-Treasurer Joseph W. Towle, the annual meeting of the Academy will be held at Northwestern University in Chicago, Illinois on Manday, December 29, 1958. (The American Economic Assocation meets in Chicago from Saturday, December 27 until Tuesday, December 30). M. J. Mandeville, Chairman of the educational program, reports that arrangements are being made to use one of the large halls on Northwestern University's Chicago Campus. Mandy promises that the sessions will be interesting and enjoyable. The program will focus upon policy formulation and/or organizational principles. One or two top caliber business executives will be invited to participate.

Keith Davis is leaving as Professor of Management at Indiana University to become chairman of the Department of Management at Arizona State College, Tempe, Arizona effective September 1.

Howard L. Timms of Indiana University will spend approximately two months of the summer in Indonesia to examine the possibility of establishing a school of business there.

R. S. (Stan) Stockton, formerly of Ohio State University, is now Associate Professor at Indiana University.

James W. Sweeney, Associate Professor of Management at Tulane University is now Director of the Computer Center at Tulane.

Charles S. Miller, Professor of Business Organization and Management at the University of Nebraska has been appointed Dean of the College of Business Administration effective September, 1958. He succeeds Dean Earl S. Fullbrook, who is retiring, but continuing as Professor of Marketing.

H. John Ross, Associate Professor of Management, University of Miami and president of the Office Research Institute at Coral Gables, Florida will leave on December 12 for a four months' stay in Karachi, Pakistan where he will inaugurate courses in records management in a consulting capacity under the auspices of the University of Pennsylvania's Wharton School of Finance and Commerce, which is establishing a school at Karachi under a contract with ICA.

Dean Morris E. Hurley left Syracuse University on June 10 to become dean of a new management training school being established in San Donato, Italy by the ENI National Gas Petroleum Corporation. William T. Jerome III, formerly director of Syracuse's Army Comptrollership School succeeds Hurley as dean.

Joseph W. Towle is group leader for the I. C. A. Chilean project this summer. Several other Academy members, including President Billy E. Goetz, are also participating.

Dalton E . McFarland has resigned from his position as Associate Director of the L. I. R. Center at MSU in order to return to full-time teaching and research in management and industrial relations as Associate Professor of Business Administration in the newly established Department of Personnel and Production Administration.

David G. Moore has been named new head of the Department of Personnel and Production Administration at MSU.

Dr. Stanley Bryan of MSU has completed two years of service with the Sao Paulo project in Brazil, and will resume his teaching and research activities in the newly established Department of Personnel and Production Administration.

Dr. William H. Keown of the University of Oklahoma has received an appointment as David Ross Boyd Professor effective September, 1958. This is one of the highest honors the University of Oklahoma can bestow and is awarded for excellence in teaching and counseling.

Dr. Ronald B. Shuman's many friends will be pleased to know that he has apparently fully recovered from his illness of last fall and is devoting his full energy to Oklahoma University's executive development program this summer.

William R. (Jack) Spriegel will leave his position as dean at the University of Texas at Austin to return to research work, writing, and teaching. His successor has not yet been named.

John D. Stanley has left the University of Buffalo to join the newly established School of Business Administration at Rochester, New York. The School will offer both undergraduate and graduate programs.

James P. Logan is returning from the Amos Tuck School at Dartmouth College to Columbia's Graduate School of Business.

Egbert H. van Delden will be in Europe for one year in a consultant capacity, developing management development programs in the seventeen E. C. A. member countries. Mail should be addressed c/o Project No. 382, European Productivity Agency, 2 rue André-Pascal, Paris 16e.

Israel Abramowitz is on leave from the University of Wisconsin for one year to work with the Carlon Products Company of Cleveland, Ohio.

Powell Niland of Washington University is spending three weeks in Korea to participate in a management development program co-sponsored by Washington University and the I. C. A.

Theodore Haimann is leaving the University of Arizona to teach in the management area at St. Louis University in the new school year.

Merten J. Mandeville of the University of Illinois is vacationing in the Virgin Islands this summer.

A new Midwest management association was founded on May 23-24, 1958 at East Lansing, Michigan on the campus of Michigan State University. It is to be called "The Midwest Management Faculty C onference" and will hold annual meetings. The 1959 meeting is to be held at the University of Illinois and the 1960 meeting at Wayne State University.

This is an organization of university and college faculty teaching or doing research in the broad area of management. It was decided to try operating the organization without officers after the pattern used successfully by the Tri-State Marketing Association. At each annual meeting the meeting places for the next two years are designated, and the management department of the university scheduled to be host for the coming year will have full charge of arrangements, publicity, and so forth for that year.

The May, 1958 conference, organized by Rollin Simonds of MSU, included discussions of the following topics: Values, Problems, and Methods in the Principles of Management and the first Production Management courses; Curriculum problems; Future Development of Business Theory; and Research Projects.

In attendance at the first conference were 55 faculty members drawn from 20 universities or colleges, ranging from Detroit in the North to Baton Rouge, Louisiana in the South and from Pittsburgh in the East to Chicago and Evanston at the western edge.

No less than eleven Academy members will be attending the Faculty Seminar in New Developments in Business Administration co-sponsored by Carnegie Institute and the Ford Foundation and to be held during the month of August at Williams College, Williamstown, Massachusetts. Participants include Paul M. Dauten, Jr., Preston P. LeBreton, H. K. L'Ecuyer, Huxley Madeheim, Joseph L. Massie, David G. Moore, Harold F. Puff, Albert N. Schrieber, Charles R. Scott, R. Stansbury Stockton, and Lyle R. Trueblood. All eleven enrollees will be a part of the Industrial Management and Production seminar.

William M. Fox, of the University of Florida at Gainesville, will leave in September on a one-year Fulbright Award to lecture in management at the Helsinki School of Economics.

Walter J. McNerney of the University of Michigan at Ann Arbor was promoted to Professor of Hospital Administration and Director of the newly established Bureau of Hospital Administration.

Ralph C. Davis of Ohio State University was a visiting professor of management at the University of Arkansas for the spring semester, teaching a management seminar and a course in advanced personnel problems.